Smithsonian

SEPTEMBER 2001

The Beauties of the Renaissance

[PAGE 62]

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Cover

Cover In this detail from Leonardo da Vinci's *Ginevra de' Benci* (c. 1475/1478), the sitter is posed in a three-quarter view, in a break with Florentine tradition. Ginevra sits before a juniper, a symbol of chastity—the most important attribute of a Renaissance woman. The picture's painted reverse bears the inscription "Beauty Adorns Virtue."
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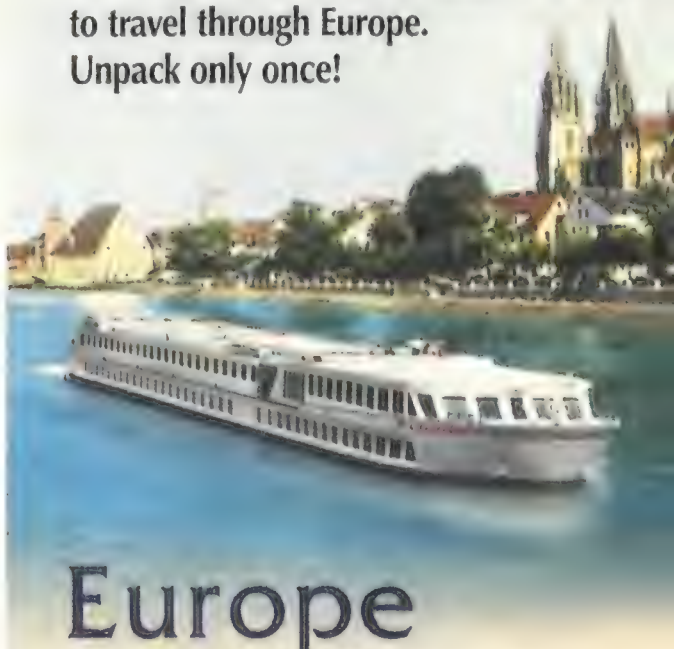

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A NOTE FROM THE SECRETARY

THE SMITHSONIAN'S SPRAWLING STORAGE COMPLEX A short drive from downtown Washington would be a plausible setting for *X-Files* action. Most of the buildings are nondescript and government-issue plain: they look innocent or ominous, depending on the tilt of your imagination. But in at least one of those buildings, science fiction gets trumped by science fact. The place is home to the Smithsonian's colony of dermestid beetles—tens of thousands of them, plus or minus, and too much in motion to be counted. The Greek roots for "skin" and "eat" are recognizable in dermestid, but *Webster's* takes a slightly more genteel approach: it defines Dermestidae as a family of small beetles "very destructive . . . to organic material of animal origin." That doesn't quite do justice to the reality.

When the door behind which the Smithsonian's dermestids go about their daily business is opened, the first thing you do is recoil—not at the sight, because you haven't had time to take in what you're seeing, but at the stink . . . odor . . . stench. You need a word for the sweet, foul aroma, and ordinary English lets you down. Metaphors aren't much better. The smell, which emanates primarily from the beetles' dung, is an invisible fog that seeps into the soul (and worse, into your clothes). It's a wall that stops you in your tracks. It's a linebacker who tackles you and won't let go. Won't let go for hours, in fact. Much later on and miles away, people may sniff discreetly in your presence, but no one will dare ask where you've been.

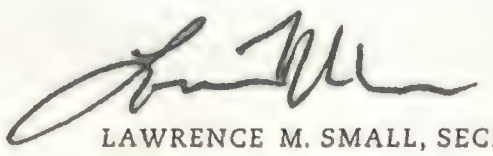
Your eyes adjust, even if your nose doesn't. In one of two environmentally controlled tanks fashioned from converted walk-in freezers, pieces of dried animal flesh—reddish, brownish, grayish—are set out in tubs on shelves, and the swarming, single-minded dermestids are guests at a round-the-clock feast.

The dermestids are eating in the service of science. Their function is to reduce new animal specimens to skeletons, and at this they are specialists. They can clean a tiny shrew, for example, without damaging the delicate bones the way chemicals and enzymes can. The dermestids in this lab help prepare thousands of specimens a year for the research work of scientists at institutions around the world and of Smithsonian zoologists. (When some of the beetles escape their quarters along the floor and scoot past your shoes, you resist the impulse to stomp only because they're family.) Zoology (vertebrate and invertebrate), entomology and botany are all research disciplines within the Smithsonian's Department of Systematic Biology, the branch of biology that explores the diversity of living things by identifying and classifying them and by working out the relationships between them.

Systematics has traditionally flourished at the Smithsonian, thanks to the immense collections of organisms the Institution has built up throughout its history. There are, for example, 35 million insect specimens belonging to the National Museum of Natural History. That's the largest (and still growing) collection in the United States, and rivals the collection of the British Museum for being the largest in the world. The specimens range from microscopic size through insects too tiny to be pierced by a pin to beetles weighing several ounces, moths with the wingspans of small birds and stick insects more than a foot in length.

Our collections—not just of insects, but of birds and fish and mammals—are like great databases, capable of continuous growth and extension, to be visited and revisited and understood anew as research adds to our knowledge. Smithsonian scientists do research not just for immediate practical use, such as containing an agricultural infestation or an outbreak of disease, but to gather data that can be stored like seeds against some future day when they will yield a harvest of understanding.

The number of species in the world may exceed 10 million (humbling thought: there are many hundreds of thousands of species of beetles alone!), but fewer than two million of them have scientific names. So if we are ever to understand fully the world's biodiversity, a staggering project of description and classification—of systematics—lies ahead. That work builds on a tradition far older than the Smithsonian. You can trace it back fancifully to the morning in Eden when God brought the anonymous animals to Adam and had him assign them names. Adam's task then is humanity's task still—to comprehend the living diversity of the world, and to take responsibility for it.



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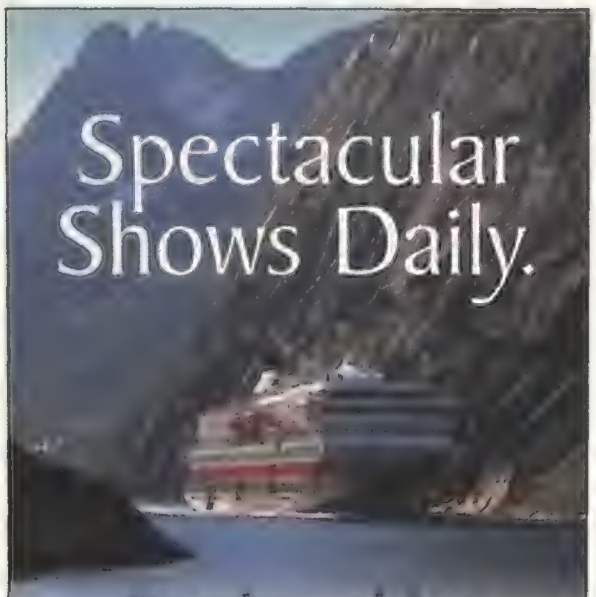

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LETTERS TO THE EDITOR

MESSAGE IN A BOTTLE

THANK YOU FOR KEVIN KRAJICK'S article about scientist Curtis Ebbesmeyer in your July 2001 issue. One of my fondest memories is the day in 1964 that a group of friends and I were looking for sand dollars along Strawberry Hill Beach near Cape Elizabeth, Maine. I wasn't having any luck, so I moved to the high-tide line, and there it was: a clear bottle with a folded piece of paper inside. The typed note was from the Woods Hole Oceanographic Institute (WHOI) and explained that they had set a bunch of these bottles adrift to study ocean currents, and that anyone who returned the note with detailed information about where and when it was found would receive an award. With that, everyone split up to look for their own bottle, but my twin sister, Carlie, found the only other one.

Months after we'd returned the notes and had forgotten about them, Carlie and I each received a letter from WHOI and our rewards, something neither of us had ever seen: brand-new Kennedy half-dollars.

John Shields
Alpine, California

YOU ILLUSTRATED YOUR STORY ABOUT Curtis Ebbesmeyer, the jetsam king, with a mural depicting Elián González being pushed ashore by dolphins. When I was a physical oceanography student at the University of Washington (Ebbesmeyer's alma mater), one of my professors was fond of pointing out the statistical bias in favor of such stories, noting that one seldom has the opportunity to interview those whom the dolphins have pushed away from shore.

John Byron
Cocoa Beach, Florida

I LAUNCHED A NOTE IN A BOTTLE from the *Queen Elizabeth II* in April 1983, expecting that the Gulf Stream would take it on a long journey from the North Atlantic. I was right: the ocean currents that flow through the Gulf of Mexico delivered my bottle and note to Matagorda Beach in Texas, 30 months later.

James E. Lincoln
Sunnyvale, California

IN 1998 MY 10-YEAR-OLD GRANDSON, Cathal DeJoseph, put a two-page letter inside an empty 20-ounce Pepsi bottle, screwed on the cap, and tossed it off MacMillan Pier in Provincetown, Massachusetts, into the Atlantic Ocean. Fourteen months later Cathal received a nice letter from a lady in Cornwall, England, who had found the bottle and note intact, on a pebble beach. She enclosed photographs of the shoreline and a map of the coastal area.

Anita Skolnik
New York, New York

SPY MUSEUM

HANK SCHLESINGER'S "FOR YOUR EYES Only," about Keith Melton's Spy Museum, was my favorite article. In the early 1970s, my father was the air attaché—and a spy—for the U.S. Air Force in Greece during the dictatorship of Giorgos Papadopoulos and the July 1974 coup attempt by Gen. Dimitrios Ioannides to overthrow Archbishop Makarios, the president of Cyprus. Security was high around the U.S. Embassy and the air base, but usually not in Psyhico, a suburb of Athens, where we lived.

One day in 1972, an envelope addressed to Dad in crude handwriting arrived at our house. It piqued my interest enough that I opened it. The letter told Dad to meet a person

at a particular location at a given time. The writer had sketched a scary-looking face on a ring and told Dad the person would be wearing it.

I confessed to Dad that I'd opened his mail and read about the secret meeting. He told me the letter was a test by the U.S. Government to see whether anyone was intercepting his mail, but he never told them that someone was: his own daughter.

Betsy French
Laguna Beach, California

THE IMPERIAL WAR MUSEUM IN London has an excellent "Secret War" exhibition that shows "the clandestine world of espionage [and] covert operations." It traces Britain's secret government agencies, MI5 and MI6, from their beginnings before World War I.

Charles H. Palmer
Albuquerque, New Mexico

VERSAILLES

RICHARD COVINGTON'S ARTICLE "Renaissance of the Gardens of Versailles" awakened a lot of misty memories. In August 1947, the year that the linden trees of the North Allée were planted, I was one of the Boy Scouts representing Lithuania at the international Jamboree de la Plaix, held at Moisson, France. We scouts were gathered from refugee camps in Germany and traveled to France on the Berlin–Paris express. The soft seats were covered with coal dust, which ruined our dress uniforms. The glitter of Paris, untouched by the ravages of World War II, was a visual feast. What really blew my 17-year-old mind was our unexpected tour of the magnificent château and incredible gardens of Versailles. That and my first taste of juicy, ripe French peaches and grapes, delicacies undreamed of in the postwar refugee camps. These images surface now and then as remembrances of things long past.

Vytautas Matulionis
Cleveland Heights, Ohio

WRITE TO SMITHSONIAN

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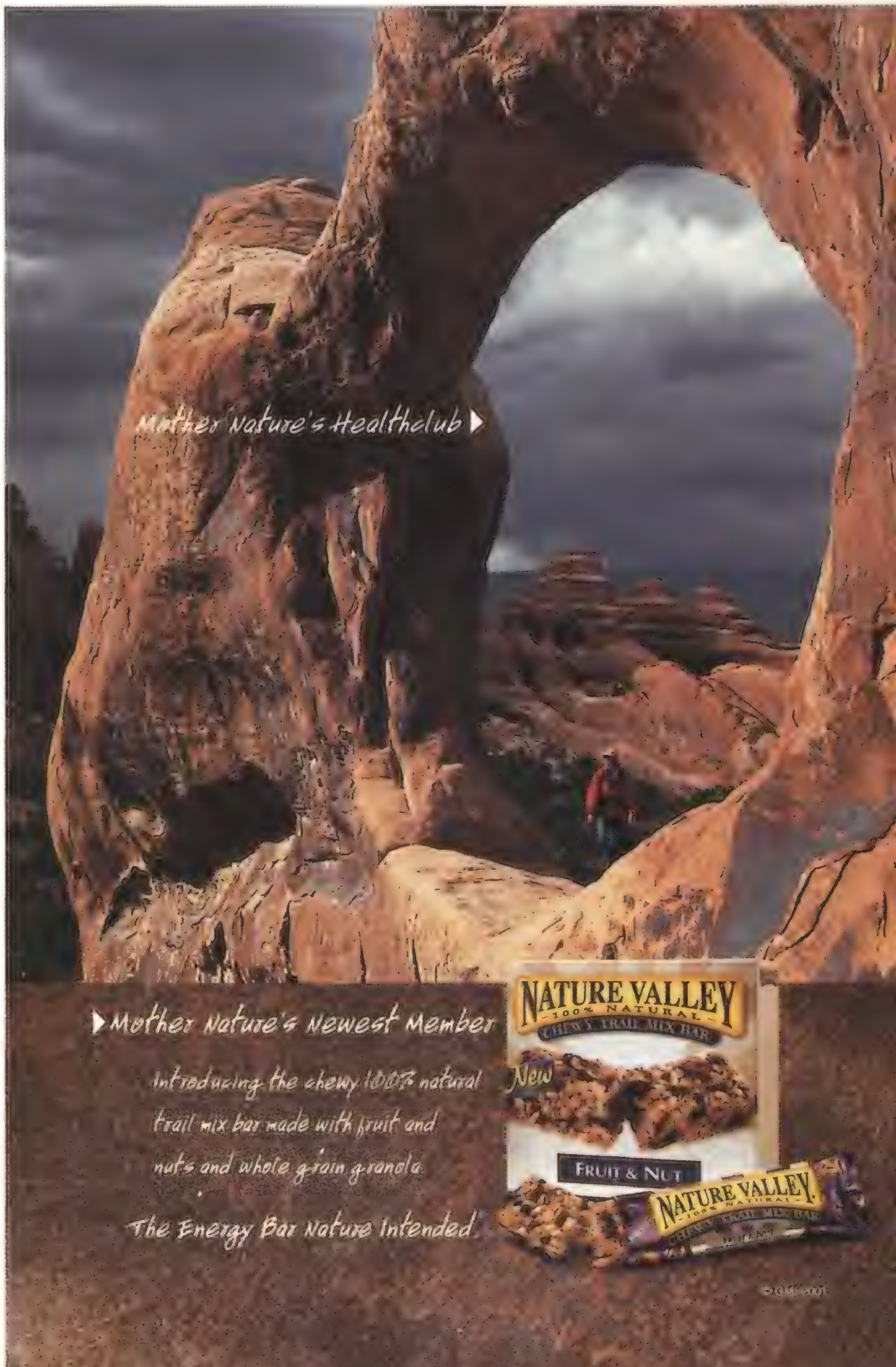
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POINTS OF INTEREST

A Flap Over Water

DROUGHT IN THE KLAMATH BASIN PRECIPITATES A DISPUTE ABOUT WATER RIGHTS AND THE WISDOM OF "RECLAMATION"

BY STEVE KEMPER

A white pelican alights on a refuge pond in wetter times. By now, both refuges in the Klamath Basin, on the California–Oregon border, have mostly dried up.

ALL: JASON MILLSTEIN

STEVE KANDRA, LOOKING WORRIED, drives me up the steep switchbacks of a gravel road to the top of Sheepy Ridge. It's a good place to get some perspective. Below us, the Klamath Basin stretches wide and flat into the distance, straddling the California–Oregon border.

Nearly everything we can see from here is under cultivation, thanks to a project begun by the U.S. Bureau of Reclamation (BOR) in 1905. Before then, most of this immense landscape was covered by shallow lakes and marshes. The government's aim was to turn those 200,000 acres of "worthless" swamps into productive farmlands. The BOR built dams, dug canals, rerouted rivers, drained wetlands and lured homesteaders with the promise of cheap land and water.

People in Klamath are proud of their pioneer history. Kandra's grandfather and great-uncle, for example, reached the basin from Czechoslovakia in the early 1900s. His father bought a farm near here in 1937. Standing on Sheepy Ridge, Kandra, 49, can point out his grandfather's original homestead, and a piece of land on the other side of the ridge that he himself owns and works.

But although his roots go deep, they may not go deep enough to save his farm from a double crisis: the severe drought and what Kandra calls a "bureaucratic drought." The Klamath Basin is high desert; most of its water comes from mountain snowmelt. This year's snowpack is more than 50 percent below normal, so much less water is draining into the basin's main reservoir, Upper Klamath Lake in Oregon. Like the other 1,200 or so small farmers in the basin, Kandra depends on water from the lake. But the BOR, under pressure from the U.S. Fish & Wildlife Service and the National Marine Fisheries Service, decided that agriculture would get no water this year. Instead, every drop must be devoted to the welfare of three endangered fish, the shortnose and Lost River suckers, which live in Upper Klamath Lake and several other bodies of water, and the coho salmon, which spawns in the Klamath River.

Five or ten years ago, farmers like Kandra could have weathered a terrible year with savings and loans, but that was before the market for potatoes and onions dropped through the basement, before banks stopped loaning money to farmers with no prospect of water. "One year without crops and I'm gone," says Kandra. "It will be catastrophic for the communities. People will leave."

During the long years of drainage, canal digging and food production, no one gave much thought to the environmental consequences of radically altering the area's hydrology and polluting its water, or to the effects of those things on fauna such as suckers and salmon. Nor did anyone give much thought to the salmon fishermen downstream whose livelihoods and communities suffered severely as dams and agricultural pollution ruined spawning rivers. Ignored, too, were the fishing rights of the Indians

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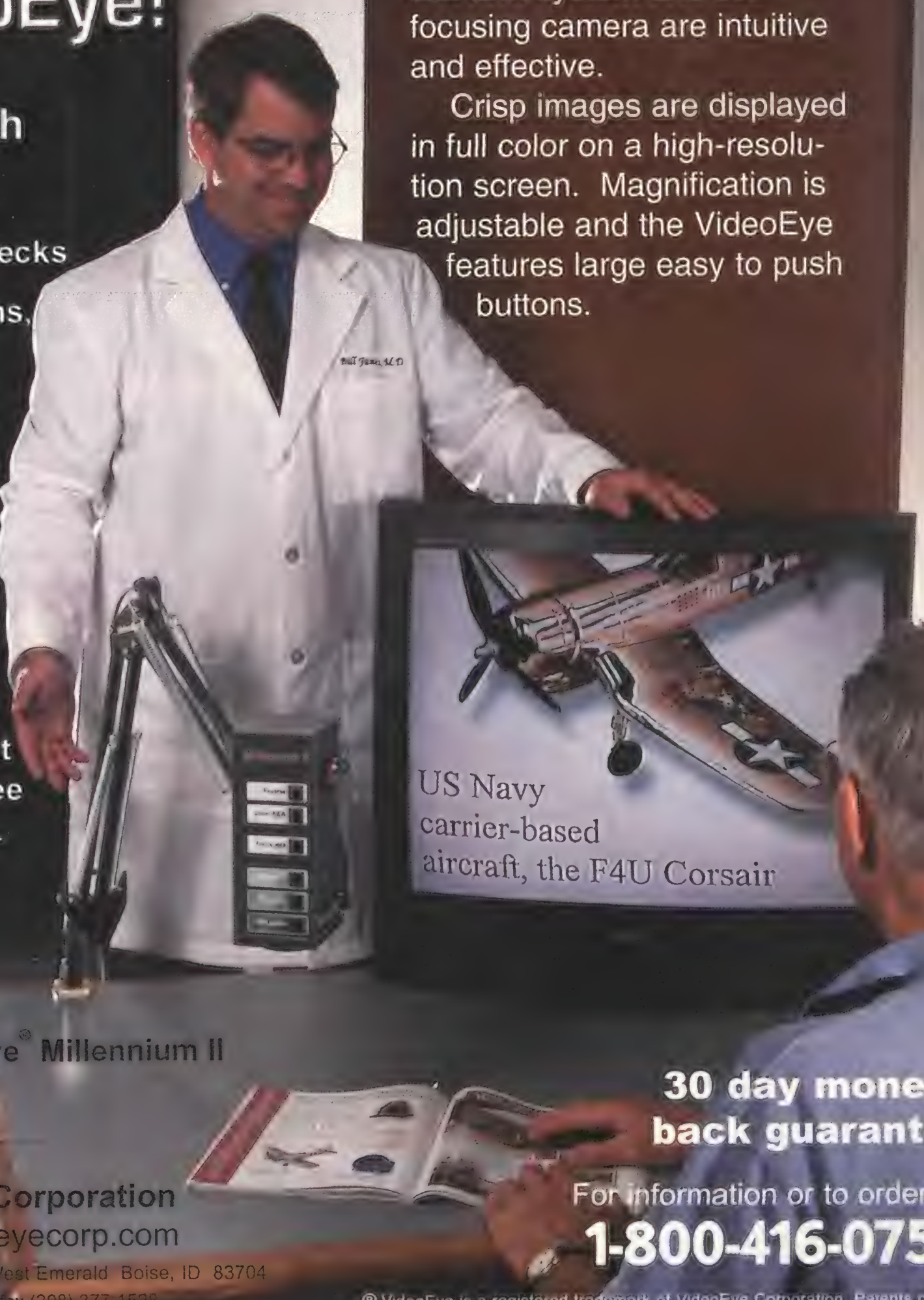

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The setting sun creates a reflective mood at the Lower Klamath National Wildlife Refuge. In a normal fall, the refuge hosts around two million migrating waterfowl.

who have been living here since long before the settlers arrived. But now environmental issues and tribal rights, backed by laws and court decisions, have shouldered their way to the front of the line, and in Klamath the line is for water.

Last in that line are two national wildlife refuges, Lower Klamath, part of which is in Oregon, and Tule Lake, located entirely in California. Something like 80 percent of the birds that migrate along the Pacific flyway stop over in these refuges for rest and nourishment. Bird-watchers, hunters and others who enjoy wildlife get upset at the idea that such special places must make do with agriculture's leftover water. They are also displeased that these two refuges, unlike the nation's other 500 or so, permit commercial farming. Nearly half of the Tule Lake refuge's 39,000 acres are cropland. A coalition of environmental groups is clamoring to remove agriculture.

After our visit to Sheepy Ridge, Kandra takes me to the weekly meeting of the Rotary Club in the town of Tulelake, California (population 1,000). It's in the back room of a well-worn restaurant where two-dozen men eat steak sandwiches and the conversation rarely strays from water policy. Kandra identifies the people around the table, including his banker, "the guy who fuels me," an accountant, some farmers and a scientist from a local research station. All of them, Kandra emphasizes, will be affected by the cutoff.

Keith Buckingham tells me he loves the farm life and Tulelake, where his father homesteaded after World War II, but he's at the end of his rope. "I'm very pessimistic," he says. "We've been hanging on by the skin of our teeth for the last half-dozen years." Three years ago, he put some of his 650 acres up for sale. Months passed without a single bite. Now Buckingham and several others have offered to sell land to the U.S. Fish & Wildlife Service.

Soon after arriving in Klamath early last year, Phil Norton, the manager of the refuges, came up with a plan. In return for converting Tule Lake's 15,000 acres of farmland back into wetlands, the federal government would buy 15,000 acres from willing sellers elsewhere in Klamath and deed them to the local irrigation boards to be leased to farmers. The plan would save water, give discouraged farmers a way out and preserve farmland for those who want to remain. Many farmers rushed to offer land; others denounced the idea as a step toward the destruction of the community.

Fred Fahner's willingness to sell has chilled some old friendships. Like Buckingham, Fahner made an effort to unload his land for a year, with no lookers. That was before the water crisis and before a government report predicted that a shortage of water for irrigation will occur in the basin in seven out of every ten years. Unlike Buckingham, Fahner wants completely out. "I've been here 40 years," he

Manager Phil Norton checks out the water level at the Tule Lake National Wildlife Refuge. Almost half of the preserve's 39,000 acres are cultivated by local farmers.

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Callie Crawford surveys her father's barren potato field next to the Tule Lake refuge. Water for irrigation has been cut off.

tells me. "It was a good life once. It is not a good life now."

Felice Pace is conservation director of the Klamath Forest Alliance, part of the environmental coalition that's attempting to get rid of farming in the refuges. The farmers consider him a litigious pest. He says they have brought the crisis on themselves by years of refusal to reduce their demand for water. He supports Norton's plan because ultimately it would return the refuges to wetlands.

Norton is deeply sympathetic to Steve Kandra's concerns about the community's future. "I don't want to keep having this fight about water every year," he tells me. "I want to look at the long term. The farmers are realizing that it's not in their best interests to keep the refuges dry. People in Seattle and Portland and San Francisco are not going to allow that to happen while the farmers take all the water. And *I* can't take all the water because I live in this community. The only long-term solution is to give the refuges the same priority as the farmers, and if we suffer, we suffer together."

That's what is happening now. The refuges are receiving no water this year except a small portion for a pond in Tule Lake that contains some endangered suckers. Norton expects the refuges to be mostly dry when the fall migration begins. Consequently, millions of waterfowl will be forced to go elsewhere. The resident bald eagles, a threatened species, may be reduced, as Norton puts it, "to scavenging road kill."

That seems inconceivable on the spring day he shows me around the 46,900-acre Lower Klamath refuge. The vast system of ponds, marshes and wetlands is pulsing with thousands of birds. We cruise past bunches of pintails, grebes, shovelers, mallards, ruddy ducks, buffleheads, canvasbacks and coots. Avocets and stilts stride at the water's edge. Northern harriers and red-tailed hawks drift above the marsh grass. Norton occasionally points out a bald eagle or a swan. In the distance, flocks of wheeling snow geese glitter against the blue sky. The Cascades rise magnificently to the west. The place is breathtaking.

"We should have recognized years ago that we were heading for a train wreck," says Norton. Wrecks inspire lawsuits. In the weeks following the BOR's announcement that farmers would receive no water, Steve Kandra and other irrigators sued, and lost. The environmentalists declared victory and threatened their own lawsuit if the latest ruling is overturned. Most of the area's Congressmen visited the basin to denounce the decision and bash the Endangered Species Act and the agencies enforcing it. For most it will be too little, too late. After protesters opened illegally an irrigation gate several times, the government in July released a small amount of water for farming—about 20 percent of the usual annual flow. People are angry and desperate, worried that their futures, like their topsoil, are blowing away.

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This leaflet tells you about ACTONEL and how to take it. Read this information carefully before you begin taking ACTONEL. It is important to take ACTONEL exactly as recommended. Read this information each time your prescription is refilled in case new information is available. This leaflet does not take the place of discussions with your health care provider because it does not describe all the risks and benefits of ACTONEL. ACTONEL can be prescribed and dispensed only by licensed health care professionals; they have information about your medical condition and more information about ACTONEL. Talk with your health care provider about ACTONEL before you start taking the medicine and during your regular checkups.

What is the most important information I should know about ACTONEL?

Take ACTONEL once a day or as directed by your health care provider. You must take ACTONEL exactly as recommended so that it will work and to reduce the risk of harmful side effects (see ***How should I take ACTONEL?***).

What is ACTONEL?

ACTONEL is a drug to treat and prevent osteoporosis. ACTONEL can reverse bone loss and help reduce the risk of breaking bones (fractures) by stopping further loss of bone and increasing bone mass. ACTONEL is not a hormone like estrogen (hormone replacement therapy used in postmenopausal women). Therefore, it does not have all the benefits and risks of estrogen.

What is osteoporosis?

Osteoporosis is a disease that causes bones to become thinner. Thin bones can break easily. Most people think of their bones as being solid like a rock. Actually, bone is tissue, just like other parts of the body–your heart, brain, or skin, for example. Bone just happens to be a harder type of tissue. Bone is always changing. Your body keeps your bones strong and healthy by replacing old bone with new bone.

When someone has osteoporosis, the body removes more bone than it replaces. This means that bones get weaker and are more likely to break. Osteoporosis is a bone disease that is quite common, especially in older women. However, young people and men can develop osteoporosis, too.

Osteoporosis can be prevented, and with proper therapy it can be effectively managed.

How can osteoporosis affect me?

In the early stages of osteoporosis, people often have no pain or other symptoms. As bones become weaker, they are more likely to break when someone falls–or even without a fall. While osteoporosis can affect any bone, the spine, wrist, and hip are the bones most likely to break. People with osteoporosis may "shrink" (lose height), develop a curved back, or have severe back pain that forces them to limit their activities.

Who is at risk for osteoporosis?

Many things put people at risk for osteoporosis. Some are just part of who you are, like being a woman, going through menopause or already being postmenopausal, being Caucasian or Asian, being thin, or having a family history of osteoporosis. Other factors include not getting enough calcium or vitamin D, having an inactive lifestyle, smoking cigarettes, or drinking too much alcohol. Long-term use of cortisone-type medicines (such as prednisone) can also cause osteoporosis in both men and women of all ages.

Who should not take ACTONEL?

Do not take ACTONEL if you have:

- low blood calcium (hypocalcemia)
- the inability to sit or stand upright for 30 minutes
- an allergy to ACTONEL
- severe kidney disease

If you are pregnant or nursing (breast-feeding), or have severe kidney disease, talk to your health care provider before taking ACTONEL.

How should I take ACTONEL?

Take ACTONEL once daily or as directed by your health care provider. It is important to take ACTONEL as recommended so that you can benefit from the medicine. Following these recommendations also helps ACTONEL work correctly and helps you avoid possible irritation of the esophagus, the tube connecting the mouth and the stomach.

Take one ACTONEL tablet first thing in the morning while in an upright position (sitting or standing) before you have anything to eat or drink (other than plain water). Do not eat or drink anything except plain water for 30 minutes after taking ACTONEL.

Remember:

- Take one ACTONEL tablet with 6 to 8 ounces (about 1 cup) of plain water (not coffee, tea, or juice, and ***especially not milk or other dairy products***).
- After taking ACTONEL, wait at least 30 minutes before lying down. You may sit, stand, or do normal activities like read the newspaper, take a walk, etc.
- Swallow ACTONEL whole rather than chewing it or waiting for it to dissolve.
- If you take vitamins, calcium, and antacids, take them at a different time of the day from when you take ACTONEL, at least 30 minutes after you take ACTONEL.
- If you forget to take ACTONEL, do not double your next dose. Simply take ACTONEL as you normally would for your next dose.
- You should continue to take ACTONEL for as long as your health care provider recommends. ACTONEL can treat your osteoporosis or help keep you from getting osteoporosis only if you continue to take it.

What should I avoid while taking ACTONEL?

Foods and some supplements and medicines can stop your body from absorbing ACTONEL. Therefore, do not take these products at or near the time you take ACTONEL: food, milk, calcium supplements, or calcium-, aluminum-, or magnesium-containing medicines, such as antacids (see ***How should I take ACTONEL?***). Ask your health care provider if there is anything else you should avoid while taking this medicine.

What are the possible side effects of ACTONEL?

Most people have no problems with ACTONEL. However, ACTONEL may cause side effects. Side effects from ACTONEL are usually mild. They generally do not cause patients to stop taking ACTONEL.

In studies of ACTONEL in patients with osteoporosis, the most common side effects were reported about as often with ACTONEL as with placebo (sugar pill). They include upset stomach, abdominal (stomach area) pain, constipation, diarrhea, gas, and headache.

This summary does not include all the possible side effects of ACTONEL. Talk to your health care provider about possible side effects. Tell your health care provider if you feel discomfort in your stomach or esophagus (the tube connecting the mouth and the stomach). Stop taking ACTONEL and tell your health care provider right away if swallowing is difficult or painful, if you have chest pain, or if you have severe or continuing heartburn.

Other important information

How can I tell if ACTONEL is working?

ACTONEL can build bone mass in most people who take it, even though they won't be able to see or feel a difference. Your health care provider may measure the thickness (density) of your bones to check your progress. This is called a bone mineral density measurement.

What if I have other questions about ACTONEL?

If you have questions about ACTONEL, ask your health care provider or pharmacist.

If you want to read more about ACTONEL, ask your health care provider or pharmacist for the labeling written for health care professionals.

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Mamie's Purse

FOR AN INAUGURAL BALL, A VICTIM OF WAR CREATED AN EVENING BAG FOR THE FIRST LADY OF A WAR HERO

BY CHRISTIAN HARLAN MOEN

Mamie Doud Eisenhower (1896-1979) carried a purse by Judith Leiber at husband Dwight D. Eisenhower's 1953 inaugural ball.

"THIS IS RIDICULOUS," EXCLAIMED A frustrated chief of security as the well-dressed crowd pushed and shoved to get a better view of the famous couple. "You've seen Presidents before."

"We've never seen one like this before," an eager woman responded.

The year was 1953. Under a waning moon, Dwight D. Eisenhower and his wife, Mamie, arrived at their first inaugural ball, the final event of one of the longest days in the history of Presidential inaugurations. Inside the National Guard Armory in Washington, D.C., blue and gray fabric draped all four walls, gold bunting with white stars bordered the ceiling and chandeliers wrapped in gold cast a soft light on gleaming floors.

The First Lady sparkled under the lights, dressed in a pale pink peau de soie gown studded with rhinestones and wearing matching gloves. Her dress caused a stir when the press glimpsed a photograph of her modeling it days before the ball. In her hand she carried a small, rounded silk pouch, the same pale pink as the dress. It was the most remarkable part of her outfit. With its overlay of pink lace reembroidered with pearls and rhinestones, and its double rhinestone closure, the bag was an unlikely testament to everything President Eisenhower had fought for.

General Eisenhower's role in the defeat of fascism in Europe eight years earlier had helped carry him to this moment. Mrs. Eisenhower exuded a unique brand of glamour tempered by a Midwestern practicality that many found irresistible. The couple represented a new era of possibility at a time when America's role in the world was greatly expanding. The crowd cheered wildly at their arrival at the inaugural ball, and throughout the evening they couldn't keep their eyes off of them, virtually ignoring the celebrity performers.

The pairing of First Lady and bag was poignant because the bag's creator might not have survived the war had it not been for soldiers like General Eisenhower. "While he was trying to save Europe and the world, my family and I were trying to survive," Judith Leiber, the bag's designer, now says. And both the new President and the designer had flourished in the war's aftermath.

"Making the bag was a great honor, and I made a second inaugural bag for her when Eisenhower was reelected," Leiber says. At the time of Eisenhower's first election, Leiber worked for the designer Nettie Rosenstein who, after calling upon her best artisans, gave the gown and bag to Mrs. Eisenhower. It would be ten years from Mamie Eisenhower's first inaugural ball before Leiber began designing bags that bore her own name, but from then on almost no First Lady would be without one.

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Founding her own company in 1963 marked a turning point in Leiber's designs. Her more recent signature pieces are known as minaudières—small, beaded cases in whimsical shapes, such as polar bears, roses, pigs and watermelon slices.

Despite her success, Leiber did not exactly choose her career path. She was born Judith Peto in Budapest, where her father, Emil Peto, worked in a bank and later in the jewelry business. In 1939 she traveled to London and was accepted to King's College where, at her parents' urging, she planned to study chemistry. She went home to Budapest to visit her family before returning to England for her first semester. World War II broke out before the summer was over, putting an end to her studies.

Although Hungary was a reluctant ally of the Nazis, throughout much of the war it had one of the highest concentrations of Jews left in Europe. As the war progressed, professional employment became increasingly limited for Jews, artisan guilds being one of the few avenues left open to them. A vague interest in handbags and a strong eye for color prompted Judith Peto to apply to the handbag-makers guild in Budapest, the first woman to do so. She was accepted, and started out sweeping the floor and cooking the glue. She would complete all three stages of her guild training—apprentice, journeyman and master—before the war ground to a finish in May 1945.

In March 1944 a special unit of the German Army moved into Hungary to begin rounding up Jews living in rural areas and subjecting those in Budapest to increasing persecution. By July 1944, the Germans had deported to death camps 437,000 Hungarian Jews, primarily from outside the cities.

At first, the Peto family stayed in the Jewish Community house, where the two daughters mended underpants for Jewish men, a job that was considered important enough to keep the Peto girls from being deported. Through a friend in the Swiss legation, Mr. Peto acquired a Swiss *schutzpass*, a document that gave the bearer safe passage. Soon the family moved to the Swiss house. Unfortunately, the pass was only for Mr. Peto.

"The son of a neighbor found that my father's pass was written on an Olympia typewriter, and he went around the building and another person had such a typewriter," Leiber recalls. "He added 'and family,' which saved our lives." But as Russian troops pounded Budapest, the Nazis became determined to eliminate the remaining Jews.

The bag was an unlikely testament to everything President Eisenhower had fought for.

"When we were marched to the ghetto from the Swiss house where we were protected, we were not sure what our fate would be," Leiber says. "The Russians were shelling the city from the east, and the Germans knew they would have to retreat across the Danube toward the west and that their commander was going to kill all the Jews in the ghetto. [Swedish diplomat Raoul] Wallenberg went to see him and told him, 'You kill the Jews and you will be hanged.' So he desisted, but the Russians hanged him anyway."

After the war, Judith Peto started making handbags from her home and later at a little factory belonging to a friend. "I did all the work myself," she says. "Cutting the parts, paring the leather, putting all the sections that went into a bag together, sewing, turning if needed, filling out the interior after turning, framing, packing and sometimes even delivering it to the customer." She worked with limited materials, but eventually a couple of secretaries at the American legation helped her to sell her handbags to their coworkers. Women at the legation became important clients and the source of valuable American dollars. Her father taught her the essentials of business and later worked for her company until he was in his 80s.

In 1946 Judith Peto married American G.I. Gerson Leiber. She came to the United States with him the following year. Mrs. Leiber retired three years ago after selling her company. She estimates that she has created more than 3,000 different designs over 30 years. She is thankful for the good fortune that spared her immediate family during the horrors of World War II and has tried to put that part of her life behind her. "You know it happened, but you move on," she says. "In the end, I am here in America and it is wonderful."

Judith Leiber met Mamie Eisenhower once. The future First Lady was touring Nettie Rosenstein's showroom. Mrs. Eisenhower would never know that she had met the creator of the evening bag that would help her sparkle under the soft lights of her first inaugural ball. She also did not realize that the evening bag, which now rests in an octagonal, smoked-glass case in the First Ladies Hall of the National Museum of American History, represented much more than just a permanent accessory to a historic moment.

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Motifs in Glassmaking

BETWEEN 1900 AND 1940, GLASSMAKERS IN the regions that are today's Czech Republic, Austria, Germany and Poland incorporated innovative designs and variations on conventional themes while using traditional techniques. Above, clockwise from bottom left: An iridescent vase (1904) influenced by Viennese Art Nouveau; a spherical candy dish (1925), created for limited production; a vase (c. 1931) painted with constructivist motifs; a covered jar (c. 1920), and two vases (c. 1917 and c. 1922/23) showing early Art Deco influences on Czech and Viennese designers. These items are part of the exhibition "Glass of the Avant-Garde: From Vienna Secession to Bauhaus, the Torsten Bröhan Collection from the Museum of Decorative Arts, Madrid," on view at the Cooper-Hewitt, National Design Museum through February 24, 2002. *—Aili Petersen*

SMITHSONIAN HIGHLIGHTS

ALL: ANGELA BROHAN

SMITHSONIAN

HIGHLIGHTS

Exhibitions and Events

NATIONAL AIR AND SPACE MUSEUM

Explore the Universe (permanent exhibition opening September 21) Explains the role of observation equipment, from the recently acquired 218-year-old Herschel telescope to increasingly sophisticated modern tools, in the exploration of the universe.

RENWICK GALLERY, SMITHSONIAN AMERICAN ART MUSEUM

The Furniture of Sam Maloof (September 14 through January 20, 2002) The sculptural furniture of the American designer and craftsman.

NATIONAL MUSEUM OF NATURAL HISTORY

The IMAX & Jazz Café (Fridays, 5:30-10 P.M., indefinitely) Enjoy dinner, live jazz and IMAX films.

The Immersion Cinema (permanent) Audiences use interactive consoles to decide how the adventure unfolds.

GEORGE GUSTAV HEYE CENTER, NATIONAL MUSEUM OF THE AMERICAN INDIAN [NEW YORK CITY]

Seth Eastman Watercolors: A Soldier Artist Among the Dakota (through October 7) Fifty-six paintings document mid-19th-century Dakota life.

Spirit Capture: Native Americans and the Photographic Image (through July 21, 2002) Images by Native Americans.

ARTS AND INDUSTRIES BUILDING

Game Face: What Does a Female Athlete Look Like? (through January 2, 2002) Features photographs of female athletes of diverse races, ages, abilities.

Brain: The World Inside Your Head (through January 2, 2002) The basic workings of the brain and its evolution and development.

HIRSHHORN MUSEUM AND SCULPTURE GARDEN

Directions—Tacita Dean (through October 21) Two works by the London-based artist-filmmaker.

NATIONAL MUSEUM OF AMERICAN HISTORY

Within These Walls (permanent) An 18th-century Georgian house and the stories of five families that lived in it.

Piano 300: Celebrating Three Centuries of People and Pianos (extended through October 21) Historic pianos are showcased at the International Gallery of the S. Dillon Ripley Center.

NATIONAL MUSEUM OF AFRICAN ART

In the Presence of Spirits: African Art from the National Museum of Ethnology, Lisbon (through September 16) Objects ranging from large, awe-inspiring masks to small, exquisitely crafted figures reflect the influence of the supernatural in sub-Saharan Africa.

ARTHUR M. SACKLER GALLERY

The Cave as Canvas: Hidden Images of Worship along the Silk Road (September 9 through July 7, 2002) Discusses the religious meaning and function of a fifth-century wall-painting found in a Central Asian cave.

FREER GALLERY OF ART

Whistler in Venice, The First Set of Etchings (through March 31, 2002) His response to the city is explored through etchings he created there.

ARCHIVES OF AMERICAN ART NEW YORK REGIONAL CENTER

Craft and the Creative Process (through October 12) Papers, letters and photographs documenting the work of leaders in the field of American craft. For information, call 212-399-5015.

NATIONAL POSTAL MUSEUM

Roberto Clemente (through October 15) Features the baseball icon who has been honored on postage stamps.

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The Case of the Purloined Pots

IN THE DESERTS OF THE SOUTHWEST, POTHUNTERS ARE STEALING A PRICELESS HERITAGE OF ANCIENT NATIVE AMERICAN ART

BY KENT BLACK ◆ PHOTOGRAPHS BY TED WOOD

CATHY VAN CAMP'S BEAT is about average for a USDA Forest Service cop in New Mexico: a million and a half acres. In February 2000, she took advantage of some unusually warm weather to check on a couple of prehistoric ruins along the remote East Fork of the Gila River. Even in the deeply shadowed arroyos at 5,000 feet, the snow from earlier storms was thinning. It had been a year since Van Camp had visited the sites, so she figured she was about due.

High prices for pre-Columbian pottery, such as these lawfully obtained examples from the San Lazaro ruins (opposite), led three men to dig illegally on an unexcavated site in southwestern New Mexico (this page). Two officers nabbed them in the act.

She first came to the Diamond Creek site. Located on a small rise about 80 feet above the river, the site was a thriving Mimbres village some 800 years ago. The Mimbres branch of the Mogollon culture, together with the Anasazi and Hohokam, flourished in the Southwest between approximately the 3rd and 13th centuries. They left behind tantalizing evidence of an advanced and artistic people. Their settlements, such as "Old Town" and "Swarts Ruin" on the Mimbres River, were important trading centers supporting several thousand people.

With its black-and-white geometric designs and complex interplay of animals, humans and mythical creatures, Mimbres pottery is among the most coveted of North American prehistoric artifacts. Because of the value of these antiquities, Van Camp was dismayed, but not particularly surprised, when she saw the condition of the sites. "There were fresh holes, dirt mounds and some blurred footprints," she recalled later. "There hadn't been a storm since January, so I knew the dig was recent."

After photographing the scene, Van Camp rode two miles along the Mimbres to another ruin known as the East Fork site. Here, too, a half-dozen fresh holes and other signs testified to a recent visit by a team of pothunters. "It looked to me like they hadn't found what they were after," Van Camp said later. "If they were coming back, we had a chance to catch them." Van Camp and fellow officer Mike Skinner set up seismic sensors on access roads leading to the wilderness. If a truck rumbled down the road, the sensor would send a signal back to the ranger station and alert the officers.

They didn't have to wait long. A little over two weeks later, at 7 A.M. on February 23, Van Camp was notified by the station dispatcher that the sensor had sounded. In short order, the two officers had rendezvoused and found a late-model truck parked near one of the trailheads. They followed tracks to the Diamond Creek site, but found no one. Pushing on, they reached the East Fork site, where, approaching, they could hear a clang of shovels and picks. Crawling on their hands and knees, they closed within a couple of hundred yards and saw three men.

The arresting officers closed to within a few hundred yards.

Finally, after half an hour, Van Camp and Skinner, a muscular law enforcement veteran, inched across the open ground to where James Quarrell, 62, and his nephew, Aaron Sera, 31, were working in a trench. After determining that the men didn't seem to be armed, the officers made their move. Cathy Van Camp used cover as best she could to creep up on Mike Quarrell, 66, James' brother, who was a short distance away from his companions. "They were completely taken by surprise," Van Camp said later at the trial. "I don't think they had the slightest concern they'd be caught. Mike [Quarrell] said to me, 'I'm going to take my licks this time and be a lot more careful next time.'"

Ten years ago, Mike Quarrell's bravado would have made more sense. In those days, very few federal prosecutors pursued cases of archaeological theft, and most judges did little more than administer hand slaps, if they didn't throw the case out altogether.

Law enforcement's job is difficult because most looters don't believe that pothunting is wrong. In many parts of the country, digging for pots and hunting for arrowheads have been time-honored, multigenerational pastimes, as essential a part of the picnic experience as fried chicken and lemonade. Many regard it as a way to supplement their income, an avocation that rewards those with initiative. I have a friend, whom I will call Ted, who was a pothunter for two decades, amassing and selling a huge collection. "If you're about to lose your home or have your truck repossessed and you know where a Mimbres site is with a potential for ten pots worth $75,000, are you going to consider it?" he asked me one day at his New Mexico home. "Of course. You don't think of it as criminal. It's not like robbing a bank. It's just lying in the ground. No one's using it, no one sees it and no one's going to miss it when it's gone. So why not?"

Why not, indeed. Sarah Vogel, the assistant U.S. attorney

Above: Officer Cathy Van Camp displays sherds from the site where she apprehended the pothunters. Right: A reformed pothunter with his collection of Mimbres bowls.

prosecuting the Quarrell case, addressed that question in her opening statement to the jury. "This isn't about pottery sherds lying on the ground," she emphasized. "There's no difference between what these men did at the East Fork site and if they'd broken into a display at the Maxwell Museum of Anthropology. These sites are part of New Mexico's open-air museum."

The Quarrell case, which went to federal court in Las Cruces, New Mexico, in October 2000, was an important case not just for federal authorities but for state, local and Native American agencies attempting to control their own lands. A conviction here would signal that legal and public sentiment had changed toward the crime of stealing ancient artifacts. An acquittal would mean the law was still no more than a joke.

Officer Robin Poague holds a pothunter's tool—a steel rod—used to probe for ancient artifacts.

Even so, the proceedings were so low-key they might have been in family court. The only spectators were either relatives on the Quarrells' side or a half-dozen Forest Service personnel and prosecution witnesses across the aisle.

At trial, the Quarrells themselves didn't look particularly worried.

There was no local press coverage. The Quarrells themselves didn't look particularly worried. Perhaps they were thinking about all the other looting cases that have been dismissed over the years. Though their nephew, Aaron Sera, had pleaded out to a misdemeanor, Mike and James were facing felony charges. Both were dressed in casual Southwest business chic: Mike was turned out in a safari jacket, jeans, and a cowboy shirt. James sported black jeans, a black western coat, and a cowboy shirt with a bola tie. Both wore cowboy boots and aviator sunglasses.

As presented by Vogel, a young woman who took a stern, brusque approach to the case, the prosecution was detailed and to the point. The defendants, she said, were caught in the act of digging. By federal law, damage to a historic site on public land in excess of $500 is a felony. The government would demonstrate that at least $12,000 would be required to restore the site.

The defense strategy was not to dispute that the defendants had been digging on public land but that they had only just arrived at the site and had barely scratched the earth. In fact, the defense insisted, most of the destruction had been perpetrated years before by parties unknown.

On the surface, the Quarrell case appeared to be not much more than a trespass on public lands. Yet as any archaeologist will tell you, it's a practice that has reached epidemic proportions.

Illegal trade in antiquities ranks as the world's fourth most lucrative illicit business after drugs, guns and money laundering. In 1998 the U.S. Information Agency reported that such trade was a $4.5 billion-a-year business. From back alleys to the most reputable auction houses, dealers, collectors, grave robbers and thieves buy and sell everything from Roman coins to Incan pottery to Sioux warbonnets. Some of these artifacts have been legally acquired, some have not. The dark side of antiquities trading often involves goods illegally excavated from historic sites. In the Old World, such commerce in plundered relics can involve material from an ancient sunken boat off a Greek island or a buried Celtic village on the English coast. In the Americas, the trade usually involves locating and looting graves.

In many countries there's not much gray area. On public or private land, all antiquities in the ground or lying around on top of it belong unequivocally to the state or to those with the most obvious cultural entitlement to them. Dig them up to decorate the mantel and you're going to jail. In the United States, however, private land ownership is one of the most time-honored principles. For the most part, if an object is found on your land, it's yours.

Nevertheless, federal and state authorities have strengthened laws and intensified prosecutions, especially in the past decade, to discourage looting. In passing the Antiquities Act of 1906, Congress made it illegal to excavate or destroy any "historic ruin" on federal lands. But it took the passage of the 1979 Archaeological Resources Protection Act to give it teeth. In 1990, NAGPRA, the Native American Graves Protection and Repatriation Act, provided for

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Officer Van Camp first discovered signs of looting at the remote Diamond Creek site, which overlooks New Mexico's Gila River.

the protection of grave sites and for the repatriation to the appropriate tribe of human remains and artifacts held by institutions that receive federal funds. Many states passed similar laws, in some cases to regulate excavations on private land. For instance, in New Mexico it is against the law to dig a known grave site or hire someone to excavate a historic site with heavy equipment without a permit from the state.

One of the prosecution's first expert witnesses in the Quarrell trial was J.J. Brody, former director of the Maxwell Museum, at the University of New Mexico, and author of several seminal works on the art of the prehistoric Southwest. "The market was very low for this pottery until the '60s," he testified. "Up until the late '50s you could get prehistoric pottery, Anasazi or Mimbres, for about $25 a pot. All that changed in the '60s," he went on. "Suddenly, international collectors were interested and auction houses were interested. Mimbres pottery shot up to $5,000 to $6,000 per pot. Now, it's not unusual to hear about some of this pottery going for $40,000 to $60,000 per pot." Several years ago, in fact, a Mimbres "story bowl" sold at auction for $100,000.

Of course, pothunting is hardly confined to the Southwest. Every part of the country has been affected. Ancient totems from the Pacific Northwest have been cut up and sold for lawn ornaments, and Caddoan sites in the Mississippi River Valley have been bulldozed and re-bulldozed. Some experts believe that as much as 95 percent of the Eastern Seaboard's important indigenous sites have been disturbed by looters, many of them destroyed. But the Southwest does offer special attractions for looters. The area is sparsely populated and, as was the case with the Quarrells, detection is often a matter of luck.

Near where I live in the mountains of northern New Mexico, it's tough to kick up a clod of dirt without uncovering a prehistoric site. This area—the Galisteo Basin 20 miles southeast of Santa Fe—contains evidence of humanity's earliest habitation in the Southwest. A couple of years ago, a young woman managing a ranch west of Highway 14 asked me out to her place for dinner. I wandered around her casita, noticing small piles of sherds, many with ornate geometric designs. She told me she usually found a handful every time she walked her dog. Later, she showed me her workroom, where she had recently glued together the sherds of a large bowl. Except for a couple of small holes and chips on the rim, the bowl was nearly complete. Narrow at the base, it flared out to nearly 14 or 15 inches in diameter. Its opening was about half that. The bowl was polychromatic, deep reddish browns, some almost rust, crisscrossed with half-inch black lines. It was extraordinarily beautiful.

She described finding the sherds sticking out of a fallen embankment and the painstaking care she had taken in excavating the pieces. She regarded the artifact with something approaching reverence. She wasn't a greedy, insensitive looter. She wasn't motivated by avarice. She told me that while digging out the sherds, she felt moved by something deep in her, a curiosity and a desire to touch something ancient that had occupied this land before her.

That evening came back to me last spring when I visited Forrest Fenn at a site a few miles from my friend's house. I'd heard about Fenn for years but became interested in making his acquaintance when his name kept popping up in casual conversation at the Quarrell trial. Some regarded Fenn as one of the best practitioners of private archaeological conservation in the state; he was a man who hunted pots *within* the law. Others felt he was nothing more than a looter with good lawyers and deep pockets. Fenn is a gruff, plainspoken man, the edges of his

West Texas drawl scarcely dulled by 30 years in Santa Fe. His manner may be partly due to his military background. He enlisted as a private in the Air Force at age 18 and rose to the rank of major, flying 328 combat missions over Vietnam before retiring in 1970. He opened Fenn Galleries in Santa Fe in 1972 and for the next 16 years was one of the Southwest's premier dealers and collectors.

On a tour of his house in Santa Fe, Fenn showed me a long table with more than a dozen extraordinary polychrome pots from the pueblo San Lazaro, part of an ancient city that had once supported nearly 1,800 people. The Tewa lived there for centuries before abandoning it sometime after the Pueblo Revolt of 1680 when the Spanish were driven briefly out of New Mexico. Thirteen years ago, Fenn acquired 160 acres of the former Cash Ranch, 73 of which contain the San Lazaro ruins. They are listed in the National Register of Historic Places.

He led me to a room adjacent to his four-car garage where he kept his neatly organized documentation of the story of San Lazaro. There were boxes of various metals, from nails to musket balls from the Spanish colonial period and even bits of Chinese porcelain (which came from Spanish traders from the Philippines), and countless boxes of various animal bones, stone tools and sherds. The San Lazaro collection is important to Fenn. It is his defense against those who claim he's nothing more than a wealthy looter exploiting a legal loophole.

Joe Watkins, an archaeologist with the Bureau of Indian Affairs who waged a well-publicized feud with Fenn over the ethical dilemma faced by archaeologists attending a Clovis symposium produced by Fenn, charged that "if you don't have contextural data, you don't have anything, just a meaningless, pretty artifact . . . a collector who does not provide provenance does not add to the research."

Eric Blinman, an archaeologist at the Museum of New Mexico, in Santa Fe, who has observed Fenn's work at San Lazaro, hasn't always agreed with his methods, but says he doesn't believe that Fenn is a complete villain. He says Fenn "possesses the most inexhaustible curiosity, and the main difference between Fenn and most archaeologists is that for him, it is a classic fight between archaeology and art history. He believes that the most important thing to come out of the earth is the artifact."

Of course, Fenn's excavations have not been illegal. Furthermore, considering the horrific damage done on private lands in the past, where acres and acres of important sites were bulldozed into oblivion, it is hard to fault Fenn's methods. Of the estimated 4,500 rooms in San Lazaro's complex, Fenn has excavated only 34, or 0.7 percent by his estimation. He has done no digging at all in two and a half years. At some point in the future, he plans to donate the site to a conservancy that will preserve it for archaeological study.

It would appear, then, that the issue at the Quarrell trial was black-and-white. Following certain strictures, it is legal to dig for mammoth bones or a new route to China if you're on private land. Otherwise, you've broken the law; hence, the Quarrells are guilty.

Except that there were several gray areas. Robert Kinney, the public defender, was skillful in disposing of several key federal allegations and pieces of evidence. The gun the Quarrells carried was excluded. Large boxes of sherds seized at both brothers' residences were excluded. Allegations that the Quarrells and Aaron Sera had dug at Diamond Creek were not mentioned to the jury, since none of the defendants were actually caught digging there. Kinney hammered away at the government's witnesses: J.J. Brody, Cathy Van Camp, and Bob Schiowitz, the Forest Service's archaeologist. Kinney's tactic was simple but potentially damaging to the government's case: Given that the expert witnesses have testified that thousands of prehistoric sites in New Mexico have already been looted, how can you prove the damage claimed if you haven't witnessed the accused actually dig every single hole? Kinney was marginalizing the eyewitness accounts of the officers to circumstantial evidence. Suddenly, the government's case looked vulnerable.

Suddenly, the case against the Quarrells looked vulnerable.

"There is so little forensic evidence," says Robin Poague, a Forest Service special agent stationed in New Mexico who was also the lead investigator on the Quarrell case. "Unless you catch somebody in the act of digging, it's tricky to make a case. You could stop a truck on Forest Service land, and there might be tools in the back and pots on the front seat and, a few hundred yards away, a couple of freshly dug holes. But you have to prove that this guy actually dug those pots out of the ground."

On the second day of the trial, Vogel, seemingly unshaken by Kinney's tactic, asked Mike and James Quarrell under cross-examination to recount the events of the pre-

Mimbres pottery, often marked with fanciful figures, commands as much as $100,000 per bowl at auction.

vious February. Both men were polite and soft-spoken, though adamant that they had committed no crime, nor damaged the sites. Vogel was not interested in their denials. What she wanted to show the jury was that no one who packed in the kind of equipment found with the Quarrells and Aaron Sera could possibly be out for a little leisurely surface collecting. The Quarrells had brought an arsenal of digging tools to the site: picks, collapsible shovels and a—some might say telltale—thin piece of metal with a T-handle called a probe.

According to Ted, the former pothunter, this steel probe is the most specialized piece of equipment a grave robber can own. A typical probe is three-eighths of an inch in diameter, three to four feet long and has a 16-inch handle perpendicular to the shaft. The shaft is flexible steel and comes from the "X" rod that lines the trunk lid of a car. It is narrow and strong, so it creates less resistance going into the earth. "Diggers always concentrate on locating the walls of dwellings first," says Ted. "Then they locate the burial earth with their probes and start digging cross channels and sifting the dirt. Most successful diggers have become so adept with their probes that they rarely damage pots. That's a lot of trial and error, probably digging a hundred test holes, leaving your probe in place and digging down to find out what you've hit."

From his own testimony, it was established that James Quarrell had long been fascinated with Mimbres pottery, though not in any nefarious way. A talented potter, he had retired from a job with the city of Deming and devoted himself to making replicas of Mimbres pottery, one of which was on permanent display in a museum in nearby Silver City. But to my mind the most important question was never asked: What would the Quarrells and Sera do with a trove of Mimbres pottery if they uncovered it?

Usually, pothunters will contract with dealers, middlemen and collectors ahead of time. "There are probably 5,000 to 6,000 collectors of this type of material," said Joshua Baer, one of the few Santa Fe dealers who buys and sells prehistoric items. "And maybe 1,000 or less who are actively trading. However, there are a lot less than there were 20 years ago. With the laws these days, you'd be crazy to trade a pot without proper documentation; they [the authorities] could come and take your whole collection."

One factor not brought up in the trial is a new proactivism on the part of Native American groups. "There has been a tremendous amount of pressure on government agencies by Native Americans in the Southwest to enforce these laws," says Ted. "Parallel to the rise in political consciousness in the '60s and '70s in other parts of American society, Native Americans began a new kind of activism. One aspect was the realization that these sites were not only an important part of their cultural heritage but part of their natural resource. There is now a new generation of Native American lawyers, historians, anthropologists, archaeologists and social scientists who have the sophistication to fight on a state and federal level to protect their interests."

Says Dan Simplicio, a Zuni tribal councilman who has worked in the Navajo Nation Archaeological Department as well as spent several years as a Zuni cultural resource specialist, "It is not a matter of legal or illegal, public or private land when it comes to grave robbing. It doesn't matter if it is scientific or for profit. For indigenous peoples, these are living things. But museums and collectors take them and objectify them, like trophies."

Prosecutor Sarah Vogel was not interested in their denials.

Unfortunately, a cultural misunderstanding continues between many European Americans and Native Americans over the sanctity of grave sites and the funerary objects found in them. "One of the reasons Zuni and other tribes have so much difficulty with repatriation," says Simplicio, "is that we are not equipped for the implications. Through eons of our religious practices, we had no instance of looting or grave robbing. It simply didn't exist. The religion made no provision for what to do with remains that had been interrupted and disturbed in the middle of this very important cycle. Their life cycle has been damaged. We have nothing in our religion that allows us to exorcise or rebaptize them. That is why the whole idea of grave robbing is so incredibly painful to us. We simply cannot conceive of this crime. Slowly, we are learning ways to deal with repatriation and reburial, but you cannot expect people with a religion perhaps thousands of

Jessica on Tuesday afternoon.

Jessica's trust fund on Tuesday afternoon.

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years old to change their belief structure overnight."

By the end of the second day of the trial, the momentum had once again swung back to the prosecution. Vogel was not easily distracted by Kinney's attempt to impeach the credibility of her witnesses and obfuscate the issue at hand. She was helped considerably in her case by the defendants themselves. During one notable exchange, Mike Quarrell damaged his position before the jury. Under cross-examination, he claimed that the only other time he and his brother had ever dug for pottery was 30 years before when a man paid them to dig on private land "and then wouldn't let us keep any of the sherds we found." Sarah Vogel raised an eyebrow. "Then where did you get those bags and bags of sherds police found in the closet of your home?" she asked. Quarrell did not respond. Vogel did not need to press the point.

The next morning it was announced that the jury had reached a verdict. There were even fewer spectators than there had been at the trial's beginning. Brody and several interested parties from the various state and federal agencies had departed the night before, and even the defendants' supporters on the other side of the aisle had thinned considerably. The defendants themselves seemed relaxed and unconcerned. They reclined in their chairs, legs crossed, and exchanged small talk with their lawyers and each other. At the prosecution's table, Sarah Vogel and Special Agent Robin Poague seemed nervous, intently discussing an array of documents spread out before them.

The jury filed in, a cross section of southern New Mexico society that included ranchers, small business owners, retirees and a housewife. I was told later that they'd reached their decision relatively quickly the night before. This foretold nothing. They could have rejected the government's evidence out of hand. After all, this is southern New Mexico, where individual rights and freedoms are not just an abstract theory. I wondered if Vogel had perhaps been a little overbearing. What if they weren't convinced that the Quarrells' offense was actually a crime?

The judge, who'd only spoken up a half-dozen times during the trial, read the verdict: guilty on all counts.

The Quarrells looked shocked, and then confused. Vogel took it in stride, but Poague was genuinely relieved. "You can have the best evidence possible in a trial like this, but you never know. This is really encouraging. It's making me think the tide's turning."

I still think back to the time in Colombia when a Tayrona Indian sold me an ancient stone effigy, or to the clandestine excavation I witnessed in southern Peru when one of the grave robbers gave me the hair comb from a 2,000-year-old corpse. Interestingly, I find myself torn in three directions: a sense of respect for the dead, a belief that both the art and detritus of past civilizations should be held in public trust, and a desire to touch something from the past. On one hand, I feel shame that after the decimation of this continent's indigenous peoples, European Americans are still out souvenir hunting. On the other, I feel kinship with my woman friend who laboriously reassembled the sherds and came up with a beautiful object hundreds of years old. To reach that far back in time and touch something real and material is, to me, a feeling like no other.

Ted, though retired from pothunting for more than a decade, says that in this day of advanced technology, digging up graves is less and less important to our knowledge of the past. "I go to a place like Antelope Mesa and look around. I know there are literally thousands and thousands of pots and other amazing artifacts in the ground there. But really, how many more pots do we need? Do museums even display half the pots they own? Will a hundred or a thousand more pots tell us that much more about the art and culture? These days, it gives me a great feeling just to go to the mesa and know that incredible art is lying in the ground, maybe forever."

For the Zuni, says Dan Simplicio, pots and other items in ancestors' graves are living things.

After the judge read the verdict, the Quarrells looked shocked.

Kent Black is a freelance writer and editor who divides his time between New York and New Mexico. Ted Wood's last photographic assignment for SMITHSONIAN *was "Walking a Wildlife Highway from Yellowstone to the Yukon," November 1999.*

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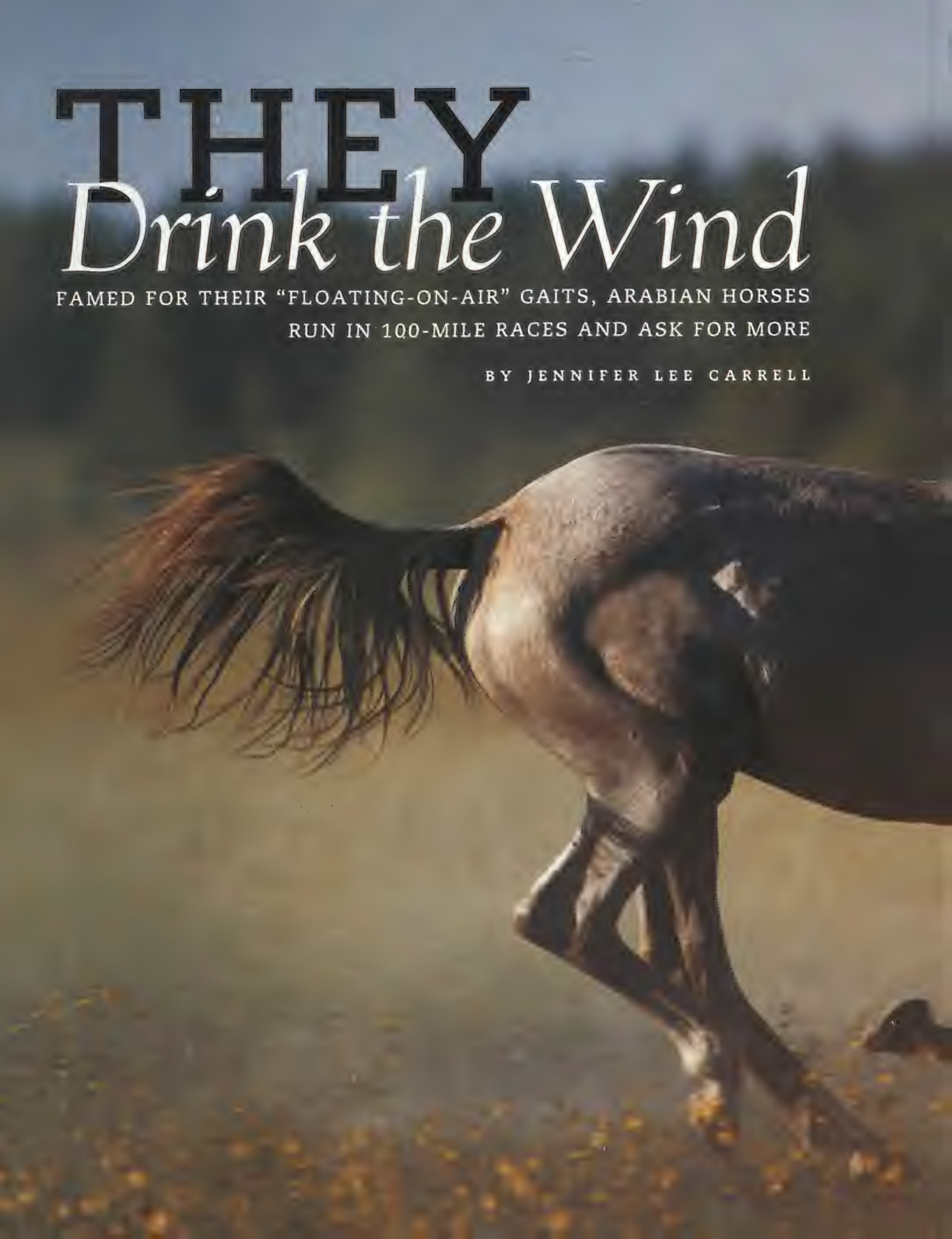
THEY *Drink the Wind*

FAMED FOR THEIR "FLOATING-ON-AIR" GAITS, ARABIAN HORSES RUN IN 100-MILE RACES AND ASK FOR MORE

BY JENNIFER LEE CARRELL



PHOTOGRAPHS BY JAMES BALOG

AM Power To Go Free, a 3-year-old stallion, runs free on the Hat Ranch in northern Arizona. Another creature of the wind, a red-tailed hawk, appears to be racing him. The horse is now in Tucson to learn a special skill called reining.

God regarded the south wind with pleasure,
tells an Arab legend, and decided to make of it a creature.
"Condense," He said to the wind, and the first horse sped over the earth.

BRED BY THE BEDOUIN TO RACE across the desert sands and into war with a fleet grace contemptuous of hardship, Arabian horses have been for centuries the archetype of the noble horse. They are thought to be the oldest recognized breed, with a history stretching back into legend: the Queen of Sheba, it is said, brought an Arabian to King Solomon.

On more certain ground, all Thoroughbreds, the racing breed of Man o' War and Secretariat, trace their lineage back to three stallions, all or part Arabian, that were brought out of the desert and shipped to England in the 17th and 18th centuries.

Today, Al-Marah Arabians, one of the world's largest individually owned Arabian horse farms, still breeds these horses amid the rigors of the desert, but this particular desert is halfway around the globe from the sands of Arabia—in Tucson, Arizona. Across 60 years, Al-Marah's founder and owner, Ruth McCormick Tankersley, known to friends as Mrs. T or Bazy, has bred at least 2,200 horses. And she's still at it.

Arabians look as different from other horses as fairy-tale princes and princesses look from peasants. They hold their tails high and arch their necks in swanlike curves. Their heads are finely chiseled and their faces dished; widely spaced cheekbones,

Ruth McCormick Tankersley has bred some 2,200 Arabians in 60 years.

sometimes called jowls, sweep into a muzzle said to be delicate enough to drink from a teacup.

The Arabian look signals aristocratic beauty, but the breed's form has pragmatic roots. The arched throat and the widely spaced cheekbones make room for a large, loosely slung windpipe. The hold of the head and neck, often humanized as "proud," tilts the whole apparatus at a prime angle for easy air exchange: they really are, as legend says, "drinkers of the wind."

Arabians also move differently from other horses; their famous "floating-on-air" gaits are the strides of long-distance runners. As Bazy puts it, "Their natural way of going—and I stress that because they've mucked it up in the show ring—is a long, low, energy-efficient way of moving."

One crisp fall day, I mount a gray Arabian mare named Beaulina and begin riding around a training ring. Donna Bolles, a tiny trainer (since retired) in a red jacket and leopard-print hat, stands in the center issuing directions and a lot of corrections, while both of us try hard not to laugh. I'm an Arizonan, at home in Western saddles; the hunt seat of what's commonly called "English" riding out here seems to me more like a slide than a seat, and in the comparatively flimsy stirrups, my legs go flapping about like scarecrows in a high wind.

Donna shows me how to sink my grip into my legs and use them for most of my body language with the horse. "Don't use a pound where an ounce will do," she cautions. To me it seems more like we're talking about nanograms: I'm used to big, sloppy communications with trail horses, but Beaulina is so well schooled that she interprets a slight pull on the reins followed by a quarter-inch backward shift of my outside leg as "Please, dear, canter now"—which she obligingly does, even when I have no idea that I've asked her to.

At first, the victories are small. Then one afternoon I feel a single curving leap as the mare breaks into the trot, and suddenly I'm encased in a powerful rhythm that bears no resemblance to the bone-jarring, pogo-stick bounce often associated with the gait. Donna says quietly, "There you go, girl," and in a near-beatific flash, I know what makes Arabians different from all other horses: flowing in harmony with Beaulina induces an ecstatic sensation of flying that most of us experience only in dreams. There is a clean rush of air in my face, and beneath me, the mare's smooth, undulating rise and fall might as well be the beating of huge shining wings skimming low over the sea.

True to the legends of her breed, Beaulina does not seem to be floating on air so much as incarnating its currents and curves. This, I think, is what it is to ride Pegasus, or to be a centaur; for a few moments I, too, am drinking the wind.

They will summon almost unimaginable reserves to help—or just to please—a trusted human friend.

When horse people discuss what sets Arabians apart, "endurance" is a word that comes up frequently. For all their refined elegance, these are horses that can and will summon up almost unimaginable reserves of stamina and courage to help—or just to please—a trusted human friend. Arabians, and the half-Arabian, half-Thoroughbred horses called Anglo-Arabians, dominate the long-distance sport of endurance riding, in which champions regularly speed through rugged 100-mile courses in under ten hours, stepping across the finish line with enough verve to suggest that they'd just as soon trot 20 miles more.

For Bazy, Arabian toughness and gallantry has always been the stuff of family legend. She grew up hearing the story of a small gray Arabian mare carrying her mother down treacherous paths out of California's mountains on a desperate ride to reach Bazy's ill grandmother. Both Bazy's father and her parents' guide tried to persuade her mother to ride a larger mount,

but she insisted on riding the Arabian.

One hundred miles later, as they arrived at the coast in the deep of night, the little mare raced down the beach and shied at moonlight flickering on sea foam. Far behind, the packhorses could do little more than plod on in exhaustion, their heads drooping with weariness.

This image of a tirelessly fleet horse running between moon and sea, outpacing and outlasting larger horses, grew incandescent in Bazy's imagination. By the age of 10, she had decided that she would one day own a whole field full of Arabians. At 80, she has far surpassed that childhood dream. Close to 250 purebred Arabians now run across the acres of desert pasture and mountain meadow that she can call her own; still more are farmed out with fellow breeders, friends and family.

Whether or not Arabians were created by God in the image of the wind, they have certainly been sculpted and polished by humans across centuries of breeding. Modern advances in breeding technology are making possible ever more radical human control—or interference—in the destiny of these horses. To some aficionados, Bazy among them, the whims of fashion are playing havoc with the breed. "Look at the horses they're putting blue ribbons on these days," she says of the exaggerated ideals of the show ring. "Look at their legs. They're standing on toothpicks."

Outside her window, pale ribbons of dust hurl themselves into the sky. Across the farm, Al-Marah's newest foal, only 4 days old, leaps into a high, cavorting war dance around his mother, for no more apparent reason than an inborn sympathy with the rush and twirl of the wind.

Running free, these animals have the time and the space to learn to be horses.

Bazy smiles. "God," she says, "did not make the horse to stand still."

Neither did the Bedouin, under whose harsh care and adoration the Arabian became what it is: a flesh and blood marathoning machine. In the traditional Bedouin world, a single purebred mare could be worth an entire herd of camels—but the horses were also part of a hard-working, hard-fighting nomad family. For months, they might be fed on nothing but camel's milk and crushed dates, enduring forced marches over burning, barren landscapes, only to be asked to summon the courage and energy to race into battle. Horses without deep reserves of stamina simply died. "The greatest breeder of all time was a guy named Survival of the Fittest," says Bazy.

Up at Hat Ranch, Bazy's historic 2,400-acre spread in the high country of northern Arizona, her yearlings run free in several herds, which thunder across grassy range dotted with juniper; the higher parts of the ranch drift up into tall pine forest.

Newcomers are put in a small pasture with a "baby-sitter"—a big, unflappable old gelding. As soon as possible, they're turned out in herds of 30 to 40 head, ranging mostly from yearlings to 4-year-olds, to spend their days running through mountain meadows, playing games, jostling for rank, and generally learning how to behave like horses.

Back in Tucson, Bazy takes me to visit her stallion AM Clem Dreamon—"very nearly," she says, "my ideal horse." Clem looks around as his stall door opens. He's silvery, speckled with tiny red flecks like those on a bird's egg: a color that some profoundly unpoetic soul long ago designated "flea-bitten gray."

Clem sighs a greeting and shifts his weight quietly as we step in beside him. You hear a lot of stories about stallions being fractious and feisty, but Bazy's are famously sweet tempered. Like the Bedouin before her, she breeds for gentleness.

To the Bedouin, she explains, good disposition was imperative. Nomadic horses were a part of the family; during bad sandstorms, mares and foals were even brought into the tents.

Good conformation, or horse architecture, Bazy declares, is all a matter of proportion and line; it's also what makes Arabians' near-magical movement possible. With one finger, she traces out the three equal circles she likes to imagine drawn, Leonardo da Vinci-like, in a line across Clem's body: one around the shoulder, one around the barrel (or middle of the body) and one around the hip.

The latest fad is for long, thin necks. "They look like they've been crossed with the Loch Ness monster."

Moving to the horse's muscular hindquarters, Bazy pats his high, rounded rear, noting that it's his "driveshaft"—the source of his physical prowess. "There's always something extreme in fashion," she muses. The latest fad, she says, is for long, thin necks "to the point that I think they look like they've been crossed with the Loch Ness monster." Clem's neck, in contrast, curves in a magnificent crested arc that would have thrilled the hearts of Greek sculptors.

Bazy moves on to the alignment of the legs—crucial to Arabian movement but bewilderingly complicated if you're not up on horse anatomy. Also at issue is strength, which brings Bazy to the simpler subject of height. "A million times," she says, "I have lectured some male person who says,

'I'm a big man, I have to have a big horse.'" She shrugs. "All right, but define 'big horse.' 'Well,' he'll say, 'I want one that's at least 15.2'"—measured in the traditional units of hands and inches.

Bazy's voice swoops into exasperation. "I say, 'You're telling me that you want a long-legged horse, you're not telling me you want a big horse'—because 90 percent of the Arabians that are over 15 hands get their height from long bones and straight shoulders." And that, she warns, spells equine disaster: "They have spindly legs.

"You don't put long spindly legs on your piano," Bazy continues, shooting a fierce glare at her imaginary, misguided man. "And this guy," she adds, patting Clem's sturdy hindquarters affectionately, "is a piano. He needs to have strong legs. So I don't pay any attention to the height of the horse. To me, it's immaterial as compared to the strength"—which comes, she says, from "big joints, tremendous muscling and short bones."

On the back of a dark bay named Coy Kyd+//, I learn firsthand about that strength. Kyd's "+//" means that he's a champion many times over: earned in the show ring, these marks become a permanent part of the horse's name. In Kyd's company, I'm no more than a novice, so I face his best event, reining—a Western cross between the fastidious precision of dressage and the in-your-face derring-do of rodeo—with trepidation.

At every early-morning lesson, we warm up by circling at a jog through the deep and freshly turned dirt of Al-Marah's palatial show arena. Then we move on to whirling through dizzying spins around a single, planted hind leg and loping through intricate patterns of circles, only to skid into spectacular sliding stops.

Diane Dupperon competes in the 100-mile Pan American Endurance Championship race in Canada.

They're spectacular, at any rate, when Bazy's head trainer, Gary Ferguson, does them on the stud Al-Marah Horatio. At a full-out gallop, they charge a fence head-on. Gary never moves in the saddle; reveling in his run, Horatio seems equally nonchalant about what looks to the uninitiated like incipient bone-smashing catastrophe.

A short distance from disaster, they don't slow down; they speed up. And so does my heart, just watching. Suddenly, with a tiny backward shift of his weight, Gary communicates "stop" to the stallion. Horatio instantly digs into the ground with his hind legs, nearly sitting on his haunches, and mere feet in front of the fence, the two slide down into a swift, skidding stop. Trailing puffs of dust, Horatio springs back up with the pride of a king rising from his throne.

Two seconds' reflection convinces me that I'll be lucky not to achieve my own brand of spectacle by flying in a lovely arc straight over Kyd's head. Assistant trainer Marquesa Cook, Kyd's owner, responds to my nerves with a chuckle. "You couldn't fall off Kyd if you tried," she says. "He won't let you. He'd move back underneath you and catch you."

Sure enough, Kyd takes care of me across the next few months. At first, his spins are carefully stepped circles, and though he stops quickly, he doesn't slide. Even so, I jolt forward toward his neck, though I never quite come out of the saddle.

One spring morning, Kyd decides to take the training wheels off. As he stretches his legs farther and farther in front of him, devouring the ground, tatters of laughter rip away from me and flutter off behind. From the center of the arena, Marquesa calls to us to slow down, but Kyd is hard to convince; he's decided I'm OK, and he's ready to run.

I shift my weight back and say "whoa!" Kyd throws on the brakes, and at long last, I feel a quick, rasping skid like skates across ice. Around us, the blurred world glides to a stop, and my innards rise and settle again in a roller coaster thrill.

"Look at those skid marks!" says Marquesa proudly. Breathing in the brown, earthy scent of horse, I lean forward to pat Kyd. After an hour's hard riding, I'm exhausted, having yet again flogged muscles that I didn't know existed in my back, seat and thighs, but Kyd takes one ginger step forward, his ears swiveling back toward me, percolating with an eager question: Again?

To see professional riders compete, I head to the big horse shows. Horsewise, the most important one is the U.S. National Arabian and Half-Arabian Championship Horse Show, held in alternate years in Louisville,

JOHN WILTSE

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Kentucky, and Albuquerque, New Mexico. People-wise, an even glitzier show plays out yearly at the Scottsdale Arabian Horse Show, in Arizona's denim-and-diamond belt.

The night of the Scottsdale finals, the huge arena is raked smooth with green shavings; in the center lurks an island where judges in tuxedos and Oscar-worthy gowns await the first class. In the stands, millionaires, movie stars, cowboys and the curious masses rub shoulders.

A bugler in Beefeater crimson and gilt blows the proceedings to order, and class after class of exquisite Arabian horseflesh file into the arena. The Park classes display fiery horses prancing high in the equine equivalent of goose-stepping, while in the Western Pleasure classes cowboys and cowgirls ride low-shuffling horses with studied calm. In the Mounted Costume classes, tasseled and plumed horses pour into the arena carrying Hollywood-style sheiks robed in rivers of gold. Bazy's horses and trainers specialize in the "performance" events like reining that display athleticism, rather than the "halter" events that focus on stylish looks.

Outside in the corrals, John Ben Cawley demonstrates the nimbleness of Bazy's horses in the cutting classes, in which horses "cut" (or separate) specific animals from a milling herd. Holding his reins high in one hand, John Ben selects a calf and points the horse's head at it. While the others flow around them like water, the chosen beast backs a little, starting first to one side, then the other. John Ben then drops his reining hand—signaling to the horse that he's on his own—and grips the saddle horn with his free hand, and the game begins. It's the calf's quest to dart and dodge around the horse to rejoin its herd in the home-base pen on the other side; it's the horse's job to keep it from doing so for the eternity of two and a half timed minutes. In other words, it's a sport of interspecies tag, demanding concentration, anticipation and lightning-fast reactions. The horses—and not a few of the calves—clearly think it's a great game.

The horse comes to a halt, displaying sudden indifference as the calf scuttles back to its pals.

John Ben spent 11 years in the rodeo ring before a broken hip and neck convinced him to take up the kinder sport of cutting. "Like riding a bucking horse," he explains with a soft Texas drawl, "you flow with the animal. In cutting you hold the saddle horn all the time, pushing and pulling to keep your weight helping the horse, rather than hindering him as he turns." He grins. "As far as seeing what an animal can do, cutting's one of the purest sports there is: in all other disciplines, you tell a horse what to do. In cutting, you just stay out of his way."

Back at Al-Marah I try cutting. As a beginner, I'm presented with one calf, of John Ben's choice. Taking a deep breath, I lower my reining hand and grip the saddle horn for dear life. For a moment, the horse and calf stare at each other balefully, and then the calf feints right and leaps left. There's a lurch and we're off: hurtling in one direction only to curve tightly back the other way, weaving in wild undulations that rock my lower torso up and down, side to side, till John Ben calls "stop!" and I pick up the reins and reach forward to touch the horse's neck with my free hand, taking back control.

The horse comes to a halt, displaying sudden lofty indifference as the calf scuttles back to its pals.

A veterinarian checks a horse's gums at a mandatory stop during an endurance race. The animal must be found "fit to continue" to stay in the race.

The defining event for Arabians is the endurance ride; with the Al-Marah crew, I head to the Pan American Endurance Championship, the Arabian equivalent of an Olympic marathon. Al-Marah's entry this year is SSA Csea Dream+.

JOHN WILTSE

Why would the leaders of the world listen to a bunch of 13-year-olds? **Because they are all members of Amnesty International.** Last year, Kim Allen's social studies class sent 665 letters to world leaders, urging them to stop torture in prisons.

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40 YEARS

AM Brazilly Billy nuzzles her brand-new foal. The mare was subsequently sold to a man in Washington State. The foal, sired by Clem Dreamon, went with her.

Usually, the 100-mile championship courses clatter up and down jagged mountains, but this one, in the midst of the Canadian prairie, rolls through high seas of sand dunes frozen into place by a fragile layer of grass. Well before dawn on the morning of the ride, lights flare, trailer doors fly open and muffled voices wind through the dark. Like squires scurrying to launch a knight into battle, we hurry to get Csea Dream fed, watered and warmed up, and his rider, Suzie Hayes, ready. All too soon, Suzie rides Csea Dream out through a narrow gate and disappears into the dark, trotting toward the invisible start down the field.

The motto of endurance riding says that "to finish is to win," but mere finishing isn't enough; horses have to cross the finish line in a state "fit to continue." Tightly controlled by vets in North America, this is not a sport that ruins animals to feed the egos of riders, owners or trainers. The most prized award is not first place but Best Condition—the horse in the top ten who finishes in the best overall physical condition. During the race, all the horses must pass numerous mandatory vet checks, which include stringently enforced rest periods. Any hint of discomfort and a horse will be pulled from competition. Csea Dream passes his first check easily, and returns to our little encampment for a mandatory 40-minute rest, grazing through a smorgasbord of hay, fresh grass, bran mash and beet pulp.

Out on the course, the day is silent except for wind and birds whistling at each other. From a hilltop near the course, I watch small clumps of competitors pass by. Eighty humid miles into the day, the riders wave and call as their horses push gamely on, some trotting, some walking.

Csea Dream, though, is not doing as well as the Al-Marah gang had hoped; they are looking for a top ten finish, but as the weather condenses into soup, the stallion stubbornly slows down: a true desert dweller, he doesn't like courses swathed in humid heat.

Back at camp, dusk falls. The riders emerge from shadowy trees. Csea Dream and Suzie finish "fit to continue," which is the first priority, but there's no avoiding the disappointment at their standing: 26th.

Arabians have notable stamina for life, as well as marathons. At 33, Clem Dreamon's maternal grandsire, AM Canadian Beau++, lazes in retirement as the grand old man of Al-Marah, having happily survived a decade beyond the expected life span of most other horse breeds. Even Arabians, though, aren't immortal.

One afternoon, Beau catches his leg in a fence while kicking out in a display of stallion bravado. Trying to

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It's hard to believe that these spindly legs can carry horses so fast and so far. Those who breed Arabians for show, however, are trying to make the legs even thinner.

wrench free, he pinches a nerve, and once he lies down, he can't get back up. It's an injury a young horse would likely recover from, but Beau is ancient and just too frail. So, on a cold, star-pricked January night, amid a circle of the stallion's human friends, the vet sends Beau peacefully to sleep—the same way as cats and dogs, by injection.

Another night a few weeks later, I huddle in dim light, waiting for the newest generation of Beau's progeny—a great-grand-foal—to arrive. Brazilly Billy, a champion cutting horse who was bred to Clem Dreamon 11 months ago, is heading into her first labor. Bewildered by the odd behavior of her body, she paces endlessly around the birth stall padded with a two-foot-deep layer of grass hay.

Mares usually foal at night, though often they stubbornly won't give birth at all if anyone's present. The breeding barn staff monitors Brazilly Billy via a video camera that feeds into a television in the apprentices' apartment off the barn, reality TV that's really worth watching.

At 10:45 P.M., there appears on the screen the surreal sheen of a tiny bubble-wrapped hoof protruding from under the mare's tail; as she paces, it bounces and lengthens into a foreleg.

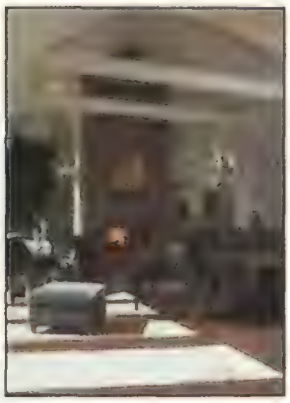
A flurry of hushed activity erupts in the barn; once labor begins, time becomes precious. If the foal is not out in 20 minutes, there's a high likelihood of serious trouble for both foal and mare. Brazilly Billy, though, won't stop pacing, much less lie down like she's supposed to. She sweats and snorts, and the other foreleg appears, but still no nose. Finally, Denise Shannon, who's taken over management of the breeding barn, has apprentice Megan McConnell hold Brazilly Billy's head while Denise takes hold of the foal's legs and pulls. Another apprentice, Mia Frazee, crouches beneath Denise, ready to help catch the baby: in the wild, mares who won't lie down sometimes lose their foals, who can break their necks in that first long fall.

There's a brief squelching noise, and the little life slips safely out of the mare and into Mia's arms. It's a girl: Brazilly Billy's filly. To keep the baby from drowning, Denise and Mia carefully hold her nose up as the amniotic sac breaks and the water gushes downward. Then they gently set her next to her mother and back out of the stall to give the new pair some time alone together.

Within minutes, the new filly is struggling to her feet, looking like a miniature horse perched atop possessed circus stilts. As the foal fights to establish a delicate, wobbling balance, Brazilly Billy at first peers back curiously at the alien creature skittering through the straw. Then the mare nickers softly and reaches down to nuzzle her newborn, claiming the filly as her own.

What both the history and the legend predict is that by morning Brazilly Billy's filly will get her legs; within the year, she'll be using them like wings as she, too, learns to drink the wind.

Jennifer Lee Carrell wrote last on Newton's career as an alchemist. James Balog, a contributor since 1981, has published five books.



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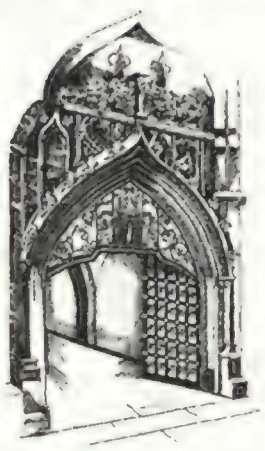

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In order to reproduce the original effect of Leonardo's masterful portrait of Ginevra de' Benci, which had been cut down sometime before 1780 because of damage, experts at the National Gallery of Art reconstructed the work digitally (right). The symmetrical composition of the painting on the reverse of the portrait (above), commissioned by Ginevra's platonic love, Bernardo Bembo, was key to determining its original width. Ginevra's arms and torso were filled in by computer and her hands were adapted from a drawing by Leonardo thought to be a study for this portrait.

VIRTUE

BY MARY O'NEILL

WHEN THE BEGUILING, YOUNG GINEVRA DE' BENCI APPEARED BEFORE HIM IN ALL her aristocratic finery in her family's Florentine palazzo circa 1475, Bernardo Bembo, the Venetian ambassador to Florence, was instantly smitten. Though Ginevra was recently wed, and Bembo more than twice her age and also married, he launched a determined campaign to win her affection. He evidently succeeded, since Ginevra's "crimson lips," "snow-white brow" and, above all, her chastity were celebrated in nearly a dozen poems addressed to Bembo and Ginevra by writers in the Medici circle. One gentlemanly poet, Cristoforo Landino, wrote of them:

> *He saw her, and the flame burst into the heart within him, and a dreadful trembling passed through his bones. For her face resembled what we often see when white lilies are mixed with red roses. . . . If you look at Ginevra's neck, you will rightly be able to scorn white snow.*

From Bembo himself, one line of lyric testimony endures. In his likely commission for the painting for the reverse of Ginevra's portrait (opposite), the inscription trumpets: "Beauty Adorns Virtue." Bembo perhaps never suspected that the painting would outshine his love. Nor could he have forecast that the artist, a neophyte named Leonardo da Vinci, would use this portrait of Ginevra de' Benci as a springboard to some of the greatest achievements in the history of art.

& BEAUTY

The Renaissance Image of the Ideal Woman

One of the crown jewels of the permanent collection at the National Gallery of Art in Washington, D.C. and the only painting by Leonardo in the Western hemisphere, Ginevra's portrait is the centerpiece of a new exhibition at the gallery. "Virtue and Beauty: Leonardo's *Ginevra de' Benci* and Renaissance Portraits of Women" focuses on the phenomenal development of female portraiture in Florence from 1440 to 1540. A cross between the real and the ideal, these works are visual representations of long-established notions of feminine beauty, propagated in the literature of the time. The exhibition includes paintings, sculpture, medals and drawings by Florentine artists, as well as influential parallel works from Northern Europe that demonstrate important developments in technique and composition. The show, which is sponsored by Airbus, opens on September 30 and runs until January 6, 2002. The National Gallery is its only venue.

Painted by Ercole de' Roberti c. 1475, these companion portraits depict Giovanni II Bentivoglio, ruler of Bologna from 1462 to 1506, and his wife, Ginevra Sforza Bentivoglio.

Leonardo apparently complied with Bembo's conception for the back panel of his portrait of Ginevra de' Benci. The artist had used juniper—*ginepro* in Italian—on the front panel as a pun on Ginevra's name. Bembo, it seems, wanted to continue that play on the reverse by having a juniper sprig entwined with a wreath of laurel and palm, his own personal emblem. The word for "beauty" is artfully wrapped around the juniper, and an infrared examination has revealed another motto, *Virtus et Honor*—Bembo's own—underneath the present one. He thus succeeded in symbolically linking himself to his love for all eternity.

In fact, Bembo and Ginevra's love affair probably existed only on a symbolic level. Under the influence of the Medici dynasty, presided over by Cosimo and later by his grandson Lorenzo the Magnificent, upper-class Florentines practiced an intricate and chaste courtship ritual with women of high rank. Though patrician men married—and kept mistresses—they reserved the art of the romantic pursuit for unattainable women, typically the wives of other gentlemen. He might have claimed to be love struck, but it is likely that Bembo dispassionately selected Ginevra as his *inamorata* to fulfill this convention. His attention was probably the bright spot in her existence. Her marriage to Luigi Niccolini, whose fortunes soon waned, produced no children—a discredit to Ginevra, who was in fragile health for much of her long life.

None of the participants expected these affairs to be consummated; indeed, the woman's incorruptible purity was the foundation of the gentleman's desire. The intricacies of the chase were well understood by all the parties, and its chief device was lyric poetry—particularly in the style of Petrarch. The Italian poet's obsession with his unattainable Laura served as the model for Renaissance lovers, and not just because of the popularity of

NATIONAL GALLERY OF ART, WASHINGTON, DC. SAMUEL H. KRESS COLLECTION; P. 62 NATIONAL GALLERY OF ART; AILSA MELLON BRUCE FUND (2)

The curtained backdrops symbolize rulership and frame views of the pair's territories. Ginevra's decorative portrayal, pale skin and blonde hair denote her beauty and rank.

NATIONAL GALLERY OF ART, SAMUEL H. KRESS COLLECTION

his verses, which were written in the Italian vernacular. Petrarch was the champion, a century before the Medici, of a revived interest in the glory days of Greece and Rome. His advocacy of the "new learning"—an emphasis on studying the classics and adhering to ancient ideals—was eagerly adopted by the Medici, Tuscany's most powerful family. Lorenzo de' Medici surrounded himself with scholars, writers, architects, philosophers and artists who integrated these ideals into a prosperous Florentine republic.

Central to this courtly concept of idealized love was the determination by the Florentine humanist Marsilio Ficino, a writer revered and supported by the Medici, that beauty was the physical evidence of spiritual virtue. A beautiful woman would be modest, graceful, humble, obedient and pious, but she would also possess something indefinable that brought those attributes together. Agnolo Firenzuola, another Florentine writer, would later delineate the physical characteristics that were sure signs of a virtuous character. The forehead should be twice as wide as it was high. (Women plucked their hairlines to achieve smoothness and proportion.) Arched brows, chestnut eyes, golden curls and a pointed (but not upturned) nose were necessary, and ears should be pale pink like roses, except at the edges, which should be the transparent red of a pomegranate seed. High, ivory cheeks should frame a small mouth, which might only occasionally reveal the woman's most potent feature—a smile that would transport the recipient to paradise. Not to be outdone, one poet declared his lover's smile would reveal six paradises. According to this canon of beauty, however, paradise would vanish if the lady showed more than six teeth.

The Medici circle set out to capture these qualities in an ideal woman by commemorating her in verse. As artists naturally began to translate these qualities visually, they faced a particular challenge in making women who were unattractive fit the formula for a virtuous appearance.

The homage accorded Renaissance women in poetry and art stood in stark contrast to their daily experience and position in society. Respectable women left their homes only to attend mass or family events. Conversing with men was considered immodest, and one writer cautioned young women against falling in love with the men they would marry. According to Ficino, "Women should be used like chamber pots: hidden away once a man has pissed in them." While Italian men were free to cultivate intellectual and cultural perfection, the peak experience for a woman was a strategic marriage to a man selected by her father or brothers. Under the dowry system, the family protected a young lady's chastity at all costs, since an advantageous marriage contract hinged on her purity. Once the men brokered that deal, the lady

Botticelli's idealized, golden beauty (left) is thought to represent Simonetta Vespucci, the platonic love of Giuliano de' Medici, also memorialized (above) by Botticelli.

was expected to fulfill her true destiny: bearing as many children (especially sons) as possible to sustain the lineage. Of particular importance in the face of the still-lingering plague, this assignment was fraught with danger, as many young women died in childbirth. The best that could be said about a woman during the Renaissance was not that she had a striking personality or possessed extraordinary qualities but that she conformed to the prescribed model of gentility and thus reflected well on her family. Even Lorenzo de' Medici's own sister, Nannina, was subject to the demands of family, state, church and merchant society. "Don't be born a woman if you want your own way," she once complained.

Portraits of women flourished in Florence because of the central importance of the marriage ritual and also because the city proved to be fertile ground for creative innovation. Florentines devoted themselves to a thriving international economy and to the world of ideas. Petrarch was part of a literary triumvirate, along with Dante and Boccaccio, that set a very high standard for Florentine intellectual life. It is estimated that by the 14th century as much as one-third of the male population was literate—an extraordinary rate during that time—and citizens were expected to participate actively in civic affairs. The urban bourgeoisie not only patronized the arts but also practiced them. Lorenzo de' Medici, one of the chief connoisseurs of the arts in all of Italy, wrote lyric poetry and treatises alongside Ficino and other scholars. By the 15th century, Florence's primacy as the center of creative and intellectual activity throughout Southern Europe was well established.

On January 29, 1475, at the height of the city's golden age, a jousting tournament (*giostra*) was organized by the Medici, and won by Lorenzo's brother Giuliano, as part of the celebration of an alliance with Venice and Milan.

STÄDELSCHES KUNSTINSTITUT, FRANKFURT AM MAIN; NATIONAL GALLERY OF ART, SAMUEL H. KRESS COLLECTION

A lavish display of Medici wealth and power, the event was dedicated to Giuliano's platonic love, Simonetta Vespucci. Simonetta is thought to be the subject of a portrait (far left) attributed to Sandro Botticelli, whose painting of Giuliano (left) is also included in the National Gallery exhibition. The lady is arrayed as a mythological figure, and her attributes—partly braided golden hair, creamy skin and arched eyebrows—are similar to those of Petrarch's Laura. Her hair is adorned with a beautiful net of pearls, called a *vespaio,* or wasp's nest; possibly a pun on Simonetta's surname. A certain Petrarchan sonnet seems to be the lyric parallel to or possible inspiration for the painting, though it was written in the previous century:

Breeze that surrounds those blond and curling locks, that makes them move and which is moved by them in softness, and that scatters the sweet gold, then gathers it in lovely knots recurling, you linger in the eyes whence wasps of love sting me. . . .

Simonetta died one year after the Giostra of Giuliano, as the joust was known, at age 23. Her early death only increased the adulation of her admirers. Botticelli's idealized portrait was painted c. 1480/1485, at least four years after her death. The same posthumous idealization characterizes his portrait of Giuliano, who was murdered by political enemies of his family at Easter Sunday mass in 1478. A charismatic 25-year-old, Giuliano was mourned as a martyr across Florence. His lowered eyelids support the theory that Botticelli's painting was completed from a death mask or drawing, and the turtledove in the lower left-hand corner signifies mourning but could also indicate fidelity to a lost love, possibly Simonetta.

Simonetta's representation as a nymph or goddess indicates the artist's emphasis on a poetic ideal of beauty rather than actual appearance. Such portraits are not psychological in the modern sense of revealing personal thoughts and feelings; rather they show the sitters in their public role as upper-class women. Although their real features were depicted, the sitters were shown as their families wanted them to be seen—as emblems of honor. Nevertheless, 15th-century artists took important steps toward authentic characterization.

The first step was prompted by a tacit challenge. Florentine painters began to consider how they could depict the inner beauty expressed so effusively by the literati. A *paragone*, or rivalry, developed between writers and painters as each aimed to immortalize Florentine women. Writers and scholars in the Medici circle doubted painting's ability to depict ideal beauty. They contended that only poetry could adequately describe the capacity of a woman's smile to transform the world. This attitude was subtly reinforced in Florentine society in the second half of the 15th century. Scholars, architects and writers received civic recognition, such as tax-exempt status or other distinctions, while most artists labored without support or renown. The Medici lodged Ficino in a country house but didn't pay promised fees to Andrea del Verrocchio, a favored sculptor.

Works by Northern masters, such as Rogier van der Weyden's *Portrait of a Lady*, c. 1460, with its more intimate three-quarter pose, greatly influenced Renaissance portraiture.

In one of the key works in the exhibition, Domenico Ghirlandaio asserts his view on the rivalry between artists and literati. The inscription that appears just behind the sitter in his portrait of Giovanna degli Albizzi Tornabuoni (p. 69) translates to: "Art, would that you could represent character and mind. There would be no more beautiful painting on earth." While Ghirlandaio seems to be commenting on the limits of his profession, the painting may actually betray a touch of sarcasm in the inscription. Using the restrictive profile pose, Ghirlandaio succeeds in portraying the lady's moral character. The book and beads (likely a prayer book and rosary) are indications of her piety, and the surrounding tomblike structure seems to be illuminated as much by Giovanna's inner beauty as by any outside source. Her radiance in this dark chamber is purposeful, since Ghirlandaio completed the painting shortly after Giovanna's death in childbirth at age 19. Ten years later, the painting still hung in her husband's bedroom, serving to bring his beloved back to life.

No artist was more preoccupied with expressing intangible attributes—the "motions of the mind," as he called them—than Leonardo. He wanted to capture Ginevra's beauty and virtue in paint, not words. "Certainly one of Leonardo's major goals was to raise visual art to the level of poetry," says David Alan Brown, curator of Italian Renaissance painting at the National Gallery of Art. To this end, Leonardo broke with a long tra-

NATIONAL GALLERY OF ART, ANDREW W. MELLON COLLECTION

dition of profile portraiture by boldly portraying his sitter in a three-quarter view. It has been said that modern portraiture begins with the connective gaze, and Ginevra looks out at us. While the profile pose symbolized rectitude and moral strength—an unmarried woman would not look at a man directly—the three-quarter pose disclosed the sitter's face, hinting at her psyche. The sitter thus gained a vitality that is absent in the modestly averted profile. The exhibition tracks the evolution in female portraiture from the profile to the three-quarter view, from a strictly idealized to a more expressive depiction, which began with Leonardo's innovation.

Inspired, perhaps, by a bust sculpted by his teacher Verrocchio entitled *Lady with a Bunch of Flowers*, Leonardo also, it is presumed, used hands to express character in his *Ginevra de' Benci*. For the first time in 500 years, these two works, both created in Verrocchio's studio, are reunited in the National Gallery exhibition. Verrocchio's bust extends below the standard head-and-shoulders format to include delicate fingers gracefully clasping a small bouquet. Leonardo apparently reprised the device in his portrait of Ginevra, gaining expressive force through the elegance of her hands and the symbolism of the flowers. White flowers represent chastity, the single most important attribute for aristocratic ladies. Ginevra wears a covering over her shoulders, as required by law and enforced by notaries called the Officials of the Women. A woman's access to the outdoors was restricted—hence the very pale skin depicted in these portraits.

Long before the National Gallery of Art acquired the work from the royal family of Liechtenstein in 1967, Ginevra's hands had been cut from the painting. Sometime before 1780, when the recorded measurements match the current size, it is thought that nearly eight inches were cut from the bottom of the portrait and half an inch from the side, probably because of fire or water damage. The wreath on the reverse is therefore truncated and off-center, and Ginevra's torso and hands are missing.

Brown has taken great pains to reproduce the effect of the original design. The exhibition includes a Leonardo drawing, *Study of Hands*, believed to be the artist's sketch of the hands for Ginevra's portrait. This drawing was used by Brown and the National Gallery's Department of Imaging and Visual Services to suggest the missing portion of the painting in a digital reconstruction (p. 62). Advances in conservation work and digital imaging provide an unprecedented insight into Leonardo's creative process. The symmetrical composition on the reverse was a logical starting point for the technicians. With the juniper twig as the central axis, the technicians were able to "restore" the missing side digitally. After scanning Leonardo's drawing, the hands and flower were superimposed on an image of Ginevra, and details were added to her costume to achieve a computer-generated approximation of the original. Brown believes Leonardo would have approved of his efforts: "For Leonardo, hands were a central means of expression. Look at *The Last Supper*, with the apostles gesturing. For him, hands were as important as the face to create expression, and that element was missing from Ginevra. That's what we were trying to bring back to the painting."

By the early 16th century, the style for female portraiture had evolved to include the frontal view, used here in Agnolo Bronzino's c. 1540 *A Young Woman and Her Son*.

A 1991 cleaning also revealed the delicacy of Leonardo's execution. According to David Bull, senior consultant to the National Gallery of Art and head of the conservation team in 1991, "The sky became more blue, and we were able to see greater clarity in the juniper bush, which was just a blot before. Ginevra became more pale, so that her flesh seems to glow." The cleaning also revealed Leonardo's fingerprints in the paint. By blurring the wet paint with his fingertips, he achieved a more atmospheric effect—a technique that prefigures modern art. "He softens the transition between one passage and another, and he makes the medium do something new," says Bull.

As for Ginevra herself, one line of her poetry survives: "I ask your forgiveness and I am a mountain tiger," she wrote, perhaps in a fit of pique over Bembo's departure from Florence. As for Leonardo's portrait of her, she may have been somewhat bewildered by it. Not only was she posed facing the viewer and placed in an outdoor setting, she was presented in dreary household attire. Leonardo wanted to depict Ginevra as unified with nature, so he used earth tones and just a touch of blue for her dress. Ginevra probably expected to

NATIONAL GALLERY OF ART, WIDENER COLLECTION

Perhaps the most admired of all the Florentine portraits of women, Ghirlandaio's luminous *Giovanna degli Albizzi Tornabuoni*, was painted after her tragic, early death.

MUSEO THYSSEN-BORNEMISZA, MADRID

be portrayed in the Florentine fashion of the day, as seen in portraits by Fra Filippo Lippi and Ghirlandaio. A hub of capitalism, Florence was a society that encouraged ostentation. Extravagant deep-blue and red fabrics, richly embroidered dresses, jeweled belts, fur, necklaces with pearls and gems set in gold, sleeves slashed to reveal diaphanous chemises—such opulence could only reflect well on the family of the sitter. Women carried patrician honor on their backs, particularly during their most important public presentation—their wedding. The amount spent on a bride's apparel could constitute 40 percent of the family's wealth. Because they were used to "mark" the woman, these dresses and jewels remained the property of her husband, who might later repossess them.

The rich textures of the ladies' costumes, as well as their hair and skin, were perfect counterparts to the technical advances in art sweeping Florence. With the development of oil painting earlier in the 15th century, Florentine artists were able to create a more tactile depiction of reality. The pigment floats in glazes of oil, and light reflects from those colors to give the image a certain depth and brilliance. Leonardo was one of the first to master this technique in Florence. As with the three-quarter pose, he was inspired by examples from Northern Europe, which he would have seen in the homes of his sophisticated patrons. Members of the patrician class, including the Medici, greatly admired Flemish painters like Rogier van der Weyden and Petrus Christus. The exhibition includes works by these Northern artists, such as Van der Weyden's *Portrait of a Lady* (p. 67), which subtly forecasts an emphasis on the sitter's inner life. The lady seems barely able to breathe under the tight belt. With her taut fingers, sensuous mouth and furtive glance, it appears her rigid control will not last much longer.

Leonardo succeeded in silencing those scholars and writers who doubted painting's power to express the "motions of the mind" or the grace of a woman's smile. Some 30 years after capturing Ginevra's inner beauty, he communicated the interior world of Mona Lisa with an unforgettable image. Just as Petrarch insisted, a woman's smile held the power to transform the world.

Washington-based writer Mary O'Neill is also a docent at the National Gallery of Art.

IN THE REALM OF *Virtual* Reality

WHEN SKEPTICAL WESTERNERS SEEK THE YETI IN BHUTAN, THE FINE LINE BETWEEN MYTH AND TRUTH DISAPPEARS

BY RICHARD CONNIFF & HARRY MARSHALL

IN THE COURTYARD OF A MONASTERY SOMEWHERE IN central Bhutan, cockerels strut across the lattice of flagstones. A dozen temple dogs doze fitfully in the sun. A novice late for prayers scurries, sandals in hand, and vanishes into a doorway. Inside, it's cold and dark. The only light oozes down like buckwheat honey through a narrow atrium, dimly illuminating the weird figures painted on the heavy timbers, and the monstrous antlers of a supposedly extinct deer, the shou, lashed to a balcony railing.

From a black recess up ahead comes the low, sonorous sound of chanting, rising steadily in pitch and fervor. A horn made from a human femur goes *oh-woe-oh-oh-oh*. Cymbals stutter. A pair of short metallic horns put up a high-pitched, reedy sound. A drum beats. Our guide leads us into a narrow hall and then, after we remove our shoes, into the prayer room, where monks in maroon robes sit around the periphery and a smudge of incense drifts up from a censer. As our eyes adjust, strange animal shapes form vaguely out of the darkness: the dust-cloyed head of a tiger hanging on a wall, a huge, primitive-looking fish with long bony scales, a string of human hands. And off to one side of the altar, the thing we have come halfway round the world to see, a hanging figure with a white veil draped over its head.

Legend says a holy man brought Buddhism to the Himalayan kingdom of Bhutan 1,200 years ago, flying in on the back of a tigress. Today, you fly into Paro International Airport in a Druk Air 72-seat jet. It's reputed to be the most technically difficult landing in the world. "While flying in," the pilot announces on the initial descent, "you may find yourself coming closer to the terrain than is usual in a jetliner. Much closer. This is normal. Don't be alarmed." Most pilots crash several times before learning how to thread their way down the corridor of valleys to the airstrip. Fortunately, they make their mistakes on a flight simulator before attempting an actual approach. Bhutan has always been a place where the virtual and the real happily coexist.

Having opened itself to the outside world only 40 years ago, the "Land of the Thunder Dragon" is also a place where tradition still shapes everyday

PP. 70-72 ROBERT HOLMES (2)

life. In the terraced rice paddies of the Paro Valley, families thresh rice by hand, the sheaves swinging overhead, sending up plumes of dust, then down, *swot*, on a rock, over and over, until all the dry kernels of rice break loose and rain down in heaps. Chili peppers, another great national food, are spread out in bright red carpets on rooftops and hillsides to dry in the sun. Only about 700,000 people live in Bhutan, most of them in the fertile valleys. Uphill, beyond the last timbered farmhouse, the forest still covers 70 percent of a country the size of Switzerland (only more mountainous). Tigers, leopards and bears still wander there. So, too, according to legend, does the *migoi*, which is what the Bhutanese call the yeti.

Migoi literally means "wild man," and the idea that there might be an undiscovered primate, a hairy quasi-human biped, still living in Bhutan's uncharted mountains is, according to some members of our expedition, the stuff of great adventure. And to some of us it is utter bunk. We agree, at least, that seeking the migoi is a way to get beneath the surface of this intriguing culture, which is why a British-American television partnership has sent us here. The group includes an Oxford-trained evolutionary biologist, a primatologist who has spent years working with monkeys in West Africa, and a British technical wiz who will keep our gear in working order. We have come equipped with camera traps, plaster of paris for casting footprints, and laboratory jars for sending back hair, scat or tissue samples to be identified by DNA analysis. We've also got video cameras to record what the migoi means to the Bhutanese themselves. Our guide is Dasho Palden Dorji, a tall, chiseled 37-year-old who was educated at the University of California, Santa Barbara, and speaks English like an American. He's a true believer in the migoi, but

We agree that seeking the migoi is a way to get beneath the surface of this intriguing culture.

patient with skeptics. Despite his easygoing manner, locals tend to trot when he issues an order. "Dasho" is a term of respect similar to "lord," and he is a first cousin to the king.

Other Bhutanese aren't so patient. When we note the failure of numerous previous attempts to find any hard evidence for the existence of the migoi, a forestry official wryly observes that Westerners only believe a species exists if a white man has given it a Latin name. In the 1950s a "new" primate was "discovered" in southern Bhutan and named with the help of a British naturalist, E. P. Gee. The golden langur, a gregarious monkey living in groups of 15 or 16 individuals, had been well known to the Bhutanese for centuries. But it is now immortalized in scientific literature as *Presbytis geei*, a name that still rankles some people in Bhutan. Local knowledge also got short shrift when yak herders reported seeing tigers in the mountains; science knew that tigers never go much above 6,000 feet. Then Bhutanese wildlife officials photographed a tiger crossing through a meadow at nearly 10,000 feet. So when locals who travel in the mountains say that a shy, solitary primate survives undetected there, isn't it a little arrogant to dismiss it as myth?

Maybe so, but our first few rounds of inquiry go to the skeptics. In a traditional farmhouse a few miles from the airport, a ritual purification ceremony is under way. The air is heavy with the smell of burning juniper and the sound of monks praying to drive unwanted spirits into intricate traps made of bamboo and ribbon. Dorji Tshering, the head of the household, sits cross-legged on the floor, fanning flies from his bowl of butter tea as he recalls his encounter with the migoi. The memory still gives him nightmares, though it happened 50 years ago. He and a friend had climbed the mountain behind the house in search of a suitable tree to saw into planks. Their journey took them through a glen called Migoi Shitexa and up to a shelter called Bandits' Cave. That night, as they collected firewood, they noticed strange footprints in the fresh snow. Tshering, now in his 80s, bow-

Opposite: Monks gather on the courtyard at Gangtey Gompa, a Buddhist complex in western Bhutan. Above: The abbot greets members of the yeti expedition at the monastery.

HARRY MARSHALL/ICON FILMS

The whole scene feels as if we've been set down in the middle of a painting in the Europe of 500 years ago.

legged, with a shock of white hair, taps his forearm at the elbow and then his knuckles, to show the length of the footprint. He knew what bear footprints looked like, he says, and this wasn't a bear. In the darkness, the two men heard the creaking and breaking of bamboo, followed by an eerie monotone call. Tshering imitates the sound. "This was definitely the migoi," he tells us. "We thought it was going to eat us up." "But what did you actually see?" we ask, and the answer is little more than a shape moving beyond the light of their fire, the size of a man, hairy, on two legs, its features indistinct in the darkness.

A woman harvests rice in the Paro Valley, a picturesque region of fertile farmland. Much of the country is mountainous, wild and unexplored.

The stories told about the migoi are often like that, full of conviction but woefully short on detail. Or chockfull of plausible details, until a trapdoor suddenly drops open in the argument: a nomad digresses knowledgeably about the differences between migoi scat, which he says mainly contains bamboo, and bear scat, which is full of acorns. Then he adds that if you happen to go into the mountains when you are spiritually unclean, the migoi will bring typhoons and hailstorms down on your head. This odd mix of being so savvy about the natural world and yet so credulous is a little hard for outsiders like us to fathom. When we ask Tshering what "Migoi Shitexa" means, he says, "the place where the yeti scratches for lice." It is normal in Bhutan to be earthy and otherworldly at the same time.

The purification ceremony ends late in the day when the children carry the spirit traps out of the house and into the fields. The traps are laden with bread, fruit, money and strands of fabric to placate the evil spirits now bottled up within. "Ghostbusters for Buddhists," someone remarks. But in truth, the whole scene feels as if we've been set down in the middle of a Brueghel painting, in the Europe of 500 years ago: blue smoke in the air, a neat golden stack of rice straw in the farmyard with a straw finial on top, a pervasive sense of religious faith, and a kind of ribald peasant contentment with the course of life. Standing outside, we can hear the monks raucously chanting their last few prayers. One of them turns his weathered face over his shoulder, grinning and shouting the words of the prayer out to us through a tiny arched window. A few minutes later, a mangy dog comes trotting back to the house from the field, a strand of ribbon trailing over its ears from its raid on the contents of a spirit trap.

The winding, one-lane mountain roads take us into central Bhutan, where the monastery called Gangtey Gompa is famous for two things: black-necked cranes forage in the broad wetlands below, and within the walls of the monastery itself is a mummified *mechume*, the putative remains of a small yeti.

The black-necked cranes are real enough, and by late October their *trum-trum* calls echo across the frosted marshes. In the brilliant white light of dawn, groups of them soar down, the sun glinting off their six-foot wingspans. In a country where the human life expectancy is about 50 years, the cranes live to be nearly half that and are revered as bodhisattva, or Buddhist deities. It's said that at the time of their departure each year, before their migration north to the Tibetan plateau, the cranes fly three times around the monastery, the clockwise ritual of any Buddhist pilgrim. There's a simpler explanation: ornithologists say the cranes are simply flying around trying to gain altitude. But for us, the symbolic and supernatural values are starting to become more intriguing.

DAVID SAMUEL ROBBINS

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Coming from a world where we see the landscape in terms of lots and subdivisions, we're learning to envy the way people in Bhutan still tell stories about their own hills and valleys.

It's easy to get caught up in local values, especially within the darkened monastery itself, where the monks chant *Om ma ni pad me hung* ("Praise to the jewel in the lotus"), as they have chanted numberless times since the 12th century. Our guide, Dasho Palden, says no Westerner has ever entered the monastery's inner sanctum before, but the abbot has arranged this visit especially to show us the mechume. The atmosphere in the prayer room is somewhere between a reliquary and a rag-and-bone shop. By the flickering butter candles, we step gingerly around sacks hanging like punching bags from the rafters. Asked what's in them, Palden replies, "Diseases. If they get out, they will spread." The wide wooden floorboards have been polished by generations of barefoot pilgrims prostrating themselves before the crowded altar. Dasho Palden prostrates himself, too, and then, according to custom, a monk hands him three dice to foresee the fate of the expedition we are about to undertake into the perilous high country. Palden rolls a 13. In the Eastern scheme of things, he assures us, this is a good, solid number.

Afterward, he leads us over to the far side of the altar, to examine the mechume. The story goes that roughly 200 years ago, in a village two days' hike from here, a series of killings occurred. A local holy man determined that this mechume was the culprit. He tracked it down and cut it in half with his sword, and the corpse has been hanging at Gangtey Gompa ever since. The head, no larger than a child's, slumps down, chin resting on the sack of skin that was once its chest. The withered hands and feet hang by threads and bits of dried flesh. The eyes are squeezed shut, and the mouth is stretched wide. Dasho Palden suggests that the mouth is making the sound of the mechume, *Wooooo*. But to us it looks as if the mouth has been frozen at the split second of this creature's death in an eternal wail of agony and despair. Either way, someone has stuffed an offering of *ngultrum*, the local currency, into its mouth.

That face continues to haunt us for days afterward, and one night around the campfire, the skeptics in our group develop an alternative theory about how it came to be at Gangtey Gompa: imagine a rural holy man beset by angry, terrified villagers demanding action. Was it practical to think he could have caught and killed a creature as elusive as the mechume, which the Bhutanese themselves sometimes describe as part god, part devil? Or did he simply find some poor scapegoat, a loner, a madman, someone who would not be missed—much as New Englanders once burned ordinary women as witches? In any case, we agree that what is hanging at Gangtey Gompa is unmistakably, unbearably, human.

"You'll have to excuse me," Kunzang Choden says, when she greets us at the front door of her family compound, "but I am expecting my uncle's reincarnation. He's an American boy, 14 now." He's due to arrive sometime before nightfall, and everyone's bustling around getting ready. Ugyen Choling Palace, where Choden's ancestors have lived since the 15th century, is at the end of the long, idyllic Tang Valley in central Bhutan.

Guide Palden Dorji (above) wears a traditional kimono-like robe. The shrunken figure (left) hanging in a prayer room at Gangtey Gompa is said to be a dwarf yeti.

HARRY MARSHALL/ICON FILMS (2)

Dorji Tshering enjoys a meal at his family's farmhouse in Paro. Tshering says he encountered a migoi 50 years ago on a nearby mountain.

It's two hours by car from the nearest town, Bumthang, and a one-hour hike uphill from the nearest road. The palace once lorded over the valley, but almost all the rooms are empty now, with the wooden window panels drawn shut to keep out pigeons. Choden, who is 48, grew up before electricity, television and videotapes came to Bhutan, and the greatest pleasure of her childhood was listening to yak herders, back from the wild, telling their stories of the high country. She's now Bhutan's leading folklorist, and she's put together an anthology called *Bhutanese Tales of the Yeti*.

Choden accepts our impression that the migoi stories are much like European fairy tales. The migoi, like an ogre in a fairy tale, often comes to a gruesome end. "I also have my sympathies with the migoi," Choden admits. "I'm sure if the migoi could tell its story, these terrible things wouldn't happen." But humans tell the stories, and "even though we Bhutanese live in nature, we have to be able to be the masters somehow."

Is it possible that's why Bhutan still has its migoi stories? Because there's still wilderness, unmastered, just beyond the farmyard gate, much as there was dark forest in Europe back when the fairy-tale tradition there was strong? Choden replies that urbanized Western countries still have their credulous tales, only updated a little: "*Star Wars* and all that comes from the fact that they've lost the wilderness and they have to look beyond, whereas we still have our environment intact, and we know that there are spirits living under the trees, spirits residing on the mountaintops. So this is still a part of our reality."

As we talk, her pet Lhasa apso noses around. "Ignore him," she advises. "He is a most terrible attention-seeker." And then she continues, "The supernatural and the natural, we do not delineate. People in the villages still perform rituals to appease the spirits that they have harmed, knowingly or unknowingly. We have, I guess, a ritual world. We have so much that is not explained. And we do not want it explained. What I fear most is that soon, with our children all going into Western schools and learning more about Western culture and beliefs, this will be lost."

Then, since our expedition is about to head off into the mountains, seeking explanations and evidence, she offers some parting advice: if we meet a female yeti, keep in mind that the yeti's long, sagging breasts make her top-heavy on a down slope. "So, yes, run downhill," Choden says. Then she grins and adds, "Go down the cliff, I think."

Next night, when our packhorses have been set free to graze, and our tents are staked down, the group gathers for dinner. We're in bear and tiger country now, our evolutionary biologist reminds us, and he gives each of us an "attack alarm." "It will produce a 107-decibel shriek, and that should scare off just about any animal." Then he pushes the trigger.

"The horses didn't twitch," someone says, when we have recovered enough to hear them contentedly tearing up the grass just beyond the light of our lanterns. We decide to put our faith instead in one of our guides, known simply as "303," for the battered old .303 Enfield rifle he keeps

HARRY MARSHALL/ICON FILMS

slung over one shoulder. The government has provided us with this armed protection because unpredictable Himalayan black bears often maul or kill unlucky yak herders.

We camp in an open meadow, but there's still forest all around. On the big old spruce trees, Spanish moss drifts in the breeze like an old man's wispy beard. Rhododendrons with leaves as big as fans grow in the understory, along with stunted little bamboo. Soft green moss carpets the floor and swells up in pom-pom clumps over broken branches. The forest itself feels as though animals—and spirits, too—have somehow taken root in the steep mountain soil. But our camera traps, with motion sensors and infrared gear for shooting by night as well as by day, turn up no big, dangerous animals. The movement of the vegetation sets them off. And once, some creature leaves its tantalizing shadow across a corner of the video frame.

Proving a species exists is relatively straightforward. The rule of habeas corpus applies: you must present a body or specimen, a holotype that other scientists can examine in a laboratory setting. Proving that a species doesn't exist, on the other hand, is near to impossible. This dawns on us, literally, at Rodong La, at 14,000 feet on the trek from Bumthang to Lhuentse.

According to Kunzang Choden, this lonely pass is one of the most frequent sites for yeti spottings. So one night two of our party, the skeptics, camp out alone at Rodong La, without 303 or any other protection, offering ourselves to the yeti as unbelievers. We spend the first part of the night holed up in a blind we've pitched in a shadowy stand of gnarled rhododendrons. It's cold and lonely. A cloud envelops us, and we have no moon or stars to give us the minimal light needed for the image intensifier on our video camera. Everything is damp and eerily silent, with no birds or insects. It feels as if the cloud has somehow sucked the sound out of the sky. On this remote spot, one of Choden's informants once saw a yeti face-to-face with a tiger.

We have no such luck. But when the lichen and moss have gone brittle with frost, the cloud lifts. The faint yellow light before dawn unveils the landscape around us, and then other hills and mountains, which gradually separate from one another as the sun rises. In the distance, brilliant orange light catches on the snowcapped peak of Gangkar Punsum. At 25,000 feet, it is the highest mountain in Bhutan, and no one has ever climbed it.

By now, we are out of the blind wandering in amazement. To the northeast, a wide lazy river of clouds

Rodong La, a remote and mysterious mountain pass (above), is reputedly a haunt for yetis. Folklorist Kunzang Choden, outside her family palace (left), is trying to preserve her country's heritage.

HARRY MARSHALL/ICON FILMS (2)

flows through a valley, and at the end, the clouds spill down over a precipice like a waterfall, tumbling and steaming between two spruce promontories. Beyond that, other valleys, still forested and without people, delve toward infinity. It makes us realize that in this vast unexplored landscape anything is possible.

But not necessarily right now. In all our climbing up lonely mountain passes and down endless winding stairways built into the cliff face, we turn up nothing remotely like a yeti. The camera traps yield one squirrel, and a yak herder urinating by the side of the trail. Then one day we make the steep, sweaty descent into a valley, where the white noise of a river rises up to meet us, along with the cries of farm children. In the remote, roadless village of Khaine Lhakhang, we meet a man named Sonam Dhendup. He's 37 years old, with black hair just starting to go gray, a wispy goatee and short, rough, muscular legs, the product of a lifetime in the Himalayas.

Dhendup tells us he has worked for the past 12 years as a migoi-spotter for the government. He has yet to see a migoi himself. But he knows a place two days' hike away, where the migoi comes to eat bamboo each spring and where his droppings pile up in heaps. The season is wrong. But the mountains are tempting, and Dhendup tells us enough to convince us he knows the local wildlife.

Accompanied by 303, two of our party follow Dhendup back up until they are walking among the clouds at 12,000 feet. In the dense, sodden forest there, Dhendup kneels to indicate the fresh pugmarks of a large male tiger, a few minutes ahead. The worn bolt on the .303 Enfield slides home with a sharp click. A soft rain begins to fall. As Dhendup creeps barefoot through the forest, he points out more tiger prints, some wild boar grubbings, places where bears have clearly rubbed against trees. He's a connoisseur of Himalayan wildlife, able to distinguish black bear and brown bear by their paw marks alone. Why would he, as skeptics like to suggest, mistake either species for a yeti?

The hill fog closes in around them, and the bamboo forest becomes a dripping prison of crisscrossed stems and pungent leaf mold. They circle aimlessly for hours, until Dhendup veers off purposefully and they arrive at the hollow tree he has been seeking. As expected, the dung heaps he saw there last spring are long gone. But there's a cavity in the tree just large enough for a human, or some creature of similar size, to hunker down and find refuge. A careful inspection turns up hairs stuck in the rough sides of the cavity. Some of the strands are long and dark, others shorter and more bristly. Not bear, says Dhendup. The hairs are, at the very least, worth packing up and taking home for DNA analysis.

Months later, in a laboratory at Oxford University, geneticist Bryan Sykes is pleased with the samples we have brought back. The hairs have plump follicles, the part that contains the DNA. Prospects for identifying the source of these hairs seem good. Sykes starts with the plausible assumption that he is looking at bear DNA, or maybe wild pig. But the DNA seems to suggest otherwise. His laboratory simply cannot sequence it. "We normally wouldn't have any difficulty at all," says Sykes. "It had all the hallmarks of good material. It's not a human, it's not a bear, nor anything else that we've so far been able to identify. We've never encountered any DNA that we couldn't sequence before. But then, we weren't looking for the yeti." It is, he says, "a mystery, and I didn't think this would end in a mystery."

What a scientist cannot add is that sometimes a mystery is enough. The skeptics in our group had conceded as much that morning back in Rodong La. Watching the sunrise on the endless mountains, we agreed that if we had a choice—a land rich in wilderness, and rich in demons, too, or a land "civilized" and full of skeptics like us—we would gladly take Bhutan the way it is, yeti and all.

Writer Richard Conniff and British producer Harry Marshall collaborated on the film Abominable Snowman: The Search for the Truth, *which airs September 14 on TLC.*

A LENS ON THE LAND

THE NATURE CONSERVANCY MARKS ITS 50TH ANNIVERSARY WITH PHOTOGRAPHS CELEBRATING ITS LAST GREAT PLACES

"IN THE END, THE DOGS POINTED THE WAY. THEY LOVE GOING TO new places, and I knew they would be interesting photographically in a natural environment." The speaker is the renowned photographer William Wegman, and he is talking about the commission he was given by the Nature Conservancy to visit and respond to one of the biologically rich lands and waters that the organization has designated as Last Great Places. Wegman, who is noted for his portraits of his weimaraners, chose Cobscook Bay, a shallow estuary in northeastern Maine known for its 20-foot tides and diverse marine life. His images and those of the 11 other contemporary photographers who were asked to focus their cameras on these important natural areas have been assembled into a traveling exhibition titled "In Response to Place." The show, which explores the intricate connection between the natural world and human beings, will make its debut at the Corcoran Gallery of Art (September 15-December 31) and will then continue on to seven other venues across the country. The exhibition is accompanied by a 160-page book, due out from Bulfinch Press this month.

By asking these artists to record their own experiences of the Conservancy's Last Great Places, says the project's curator, Andy Grund-

Photographer Lynn Davis chose the Colorado Plateau in Utah because it appealed to her "love of geometry, of form and emptiness." Her *Wilsons Arch, Highway 191* (this page) and *Highway to Dugout Ranch* (far left) contrast the dramatic geological formations of prehistoric times with the roads that symbolize human enterprise. Mexico's Calakmul Biosphere Reserve is "so remote and pristine and undeveloped," says Sally Mann. "I couldn't help but feel like one of the discoverers of the place." The tropical forest has taken root in the great Maya pyramids (left), at once obscuring and helping to save them.

berg, "I wanted to investigate new ways of thinking about how the camera could depict our relationships to the land, to beauty, and to nature in general." From the Shawangunk Mountains of New York to the Pribilof Islands of Alaska, from the monumental rock formations of Utah's Colorado Plateau to the mystical pyramids of Mexico's Maya Forest, the participating photographers set out to capture their own personal sense of the place they visited and to crystallize their perception of its geography, its people and its import.

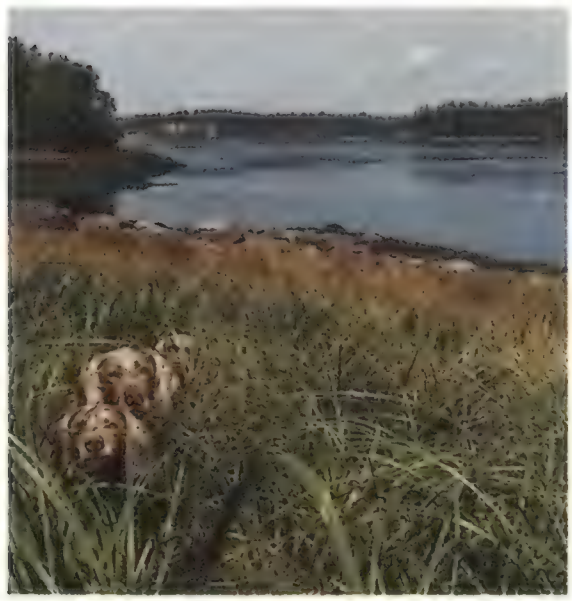
"As the photographers explore in this exhibition and book," writes Nature Conservancy president Steven J. McCormick, "people are just as much a product of landscape as wildflowers and jaguars." The Last Great Places "are landscapes where the natural world still bears hope and promise for all its inhabitants." —*Diane M. Bolz*

William Christenberry, Bibb County Glades, Alabama—*Cahaba River, Winter Day, December*: Home to 131 species of fish and one of the country's true hot spots of biological diversity, the Cahaba River flows for 190 miles through the heart of Alabama. "Once I heard about the Bibb County Glades," says Christenberry, "I knew I had to go there."

Richard Misrach, Pyramid Lake and Wetlands, Nevada— *Battleground Point #20*: "In twenty-five years of wandering the American desert, I have never seen sand dunes surrounded by water like we found here in the Carson Sink," says Misrach, whose pictures capture the remarkable play of light created by this rare accumulation of rain.

Karen Halverson, Cosumnes River, California—*Valley Oak Tree*: The last free-flowing river on the western slope of the Sierra Nevada, the Cosumnes attracts flocks of migratory birds. Its once abundant but increasingly rare valley oaks were budding when Halverson visited. "There is something very special about being there by yourself," she says. It's just "you and the place."

Terry Evans, Tallgrass Prairie Preserve, Oklahoma—*Sunset:* Conservationists have reintroduced fire and bison to help restore part of the largest stretch of tallgrass prairie in North America. "My task as an artist is to tell the stories of the prairie," says Evans. In Oklahoma, "a complex network of human support enables a healthy ecosystem to flourish."



William Wegman, Cobscook Bay, Maine—*Cobscook:* Wegman posed his weimaraners for his series of photographs of Cobscook Bay, one of the most ecologically intact estuaries on the Atlantic seaboard. The dogs, says Wegman, "reflect light and change wherever they seem to be. I live vicariously through them. When they check out a place, I absorb it through them."

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Annie Leibovitz, Shawangunk Mountains, New York—*Pitch Pines and Gray Birch in the Dwarf Pine Ridges:* In photographing landscape, says Leibovitz, "your work becomes a dance with nature and the weather." Leibovitz owns land in upstate New York and chose the Shawangunks, a popular recreation destination and critical area for biodiversity conservation, to better understand her own backyard.

Mary Ellen Mark, Pribilof Islands, Alaska—*Cold Summer Day:* Mark gives a human face to conservation with her pictures of the people of the Pribilofs, islands known as the Galápagos of the North. "I always photograph people at the furthest reaches," she says.

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THE ART *of* PERFORMANCE

At dawn, Laysan albatross patrol the beach on Midway's Sand Island.

Smithsonian journeys

WHERE THE GOONEY BIRDS ARE

MORE THAN 400,000 ALBATROSS PAIRS NEST ON MIDWAY ATOLL, WHICH IS NOW THE SITE OF AN EXTRAORDINARY NATIONAL WILDLIFE REFUGE

BY TIMOTHY FOOTE

MIND YOU, VISITORS ARE NEVER SUPPOSED TO LAY a finger on a bird at the National Wildlife Refuge on Midway Atoll in the North Pacific. Then picture if you will a misty 6 A.M. moment, a grassy acre or so and a Brueghelian scene in which 25 people, including me, many of them very middle-aged and not exactly thin, stalk hundreds of clacking albatross, also known as gooney birds, and fill the air with coarse shouts of "Grabber, here!" or "Bander, this way!" The show, presented on a monitored chunk of field beside the U.S. Fish & Wildlife Service (FWS) offices, includes a revolving cast of visitor volunteers like me. Most of them are trained as "grabbers," who work in pairs, pursuing and, if lucky, catching and, if luckier still, gently holding a big fledgling's head and body so that it can be

Ghostly remains of runways on Eastern Island recall a time six decades ago when American bombers and fighters operated from this field during the Battle of Midway. Today, tens of thousands of albatross and sooty terns use the runways; visitors can explore the island on weekly guided tours.

banded with special pliers that will not harm the bird's leg. While gooneys won't budge for a bus trying to make its way down the main street of Sand Island, they are frisky and feisty enough when we try to grab them. They retreat, wings uplifted.

Once in hand, the five- to six-pound chicks are warm and scarily insubstantial to the touch. You think at first you might break a wing or a neck while handling them, but in fact they are surprisingly stout and strong. And, yes, they do bite. And throw up on you if they get upset. Crucial advice for future banding participants: before you grab the bird's body, be sure your partner has grabbed the head. Otherwise, the bird's sharp-edged bill may leave a minor flesh wound on your hand or arm.

That's the kind of close encounter with the exotic world of wildlife you might have on Midway Atoll nowadays. The place is little more than three tiny specks on the map of the North Pacific—Sand Island, Eastern Island and microscopic Spit—with a ring-shaped coral reef attached. The name is most famous for a significant air and sea battle fought six decades ago by a handful of U.S. ships and aircraft against a much larger Japanese fleet, which changed the course of the war in the Pacific and perhaps the history of the 20th century. The Battle of Midway, much celebrated in print and film, can still give a lift of the heart, still stir a sense of fate and history. From 1903 until recently, through several hot wars and one cold war, Midway belonged to the U.S. Navy, which helped preserve it from commercial exploitation and public access. Today, cleaned up by the Navy at a cost of $90 million and handed over to the Interior Department's Fish & Wildlife Service, it is a matchless national wildlife refuge. Happily, for the first time it can be visited by the public—though at a price and in strictly limited numbers. Every Saturday one Aloha Airlines flight drops off—and picks up for a 1,200-mile return to Honolulu—about a hundred passengers, that being all the visitors that refuge rules permit at a time.

The visitors find a fantasia of airborne and seaborne creatures in a habitat about the size of a small college campus. They discover, too, a 1950s naval air

MICHAEL PITTS/BBC NATURAL HISTORY UNIT; PP. 88, 89 KEVIN SCHAFER

station preserved as if it were a museum and now operating as a cozy hotel. Busily caring for the islands, monitoring, studying and explaining the creatures and the history is a shifting group of FWS people, field scientists and lecturers, as well as volunteers young and old, mostly willing to let you lend a hand. The FWS believes students, scientists and environmentally inclined visitors should be exposed to the wonders and challenges of its unique refuge. But on its meager budget the FWS could never maintain Sand Island's airstrip or its harbor facilities, or bear the cost of servicing the incoming flights, arranging weekly courses in "observational biology," or lavishly housing and feeding visitors. That is handled by a new company, the Midway Phoenix Corporation, one-half of an admirable experiment in partnership between government and business.

On Sand, Spit and Eastern islands' lonely beaches, about three score and five Hawaiian monk seals, some of the rarest of sea mammals, occasionally haul out. Offshore, big green sea turtles row slowly by under your boat. As a paying volunteer, you might also motor out into the lagoon to help monitor spinner dolphin behavior with biologist Susan Rickards of the Oceanic Society, the San Francisco-based ecotourism operator that runs research expeditions on Midway. Unlike their cousins, the familiar bottlenose, spinners tend not to adapt well to captivity, and only a few have been successfully tagged, so there is still much to learn of their biology. For years, Rickards and others have headed out to photograph individuals and groups and study behavior; she keeps track of more than 200 animals by their individual markings, such as serrated dorsal fins or circular scars left by the small sharks known as cookiecutters. As we near the reef, one of the large, three-toned dolphins explodes straight toward the sky, spinning as it rises more than its length out of the water before smashing back down into the sea. Then, almost impossibly, it jumps and spins twice more—all three jumps in quick succession.

Still, it's the birds that are the main draw on Midway: hundreds of thousands of seabirds call these islands home. White terns with black shoe-button eyes are everywhere, along with 16 other species. All the birds are spectacular, particularly the great frigate bird and white-tailed tropicbird. A few bear comic names, such as masked booby and bristle-thighed curlew. And Midway is also thick with what I have mainly come to see—the albatross. More than 400,000 nesting pairs of Laysan and black-footed albatross return to the atoll every November to breed.

In a very real sense it is the albatross who own the island. Albatross travel thousands of miles every year over the open ocean but always come back to nest, rarely more than a few feet from their previous nesting site. The banding that goes on here bears this out. Recently banders caught a black-footed albatross first tagged on Midway in 1958. Because they are so faithful to a single site, year after year, it is also easy for people to grow attached to them. When I talked with Linda Campbell, a Navy brat on Midway in the 1960s, she fondly recalled that about 25 albatross pairs nested on her chief petty officer father's small lawn; the pair closest to the front door, nicknamed Gertrude and Heathcliffe, were regarded as the family pets.

On Midway, it is not shifts in weather that determine the seasons but the comings and goings of gooney birds.

A pair of Sand Island albatross engage in a courtship dance. In the background is Cross Point, where each spring Midway holds its celebrated Easter sunrise services. As the island group lies just east of the international date line, these are the last such religious rites of the day performed on American soil.

JIM LEACHMAN

Bi-colored Laysan albatross and their dark-colored offspring blanket Midway so completely that visitors are allowed to travel only by golf cart, bicycle and on foot. While ungainly on land, the albatross is king of the air, capable of flying many thousands of miles over water in search of food for its chicks.

"Summer isn't summer," explains field biologist Heidi Auman, "it's the bird window"—the Midway term for the period from August to late fall when all the albatross are gone from the atoll. (Auman worked eight years for Midway Phoenix as "academic liaison," serving as island guide, lecturer and mentor. She has since left.) She says that the absence of albatross at first is a relief. You can bike without slaloming, drive a golf cart with no thought of causing injury. "People get to mow their grass," she says. "The place begins to look like a 1950s suburb." But then they start to miss the birds. Betting pools spring up about the exact day and hour when the first returning albatross will land. "November isn't fall," she says. "It's when *they* come back. First one, then a handful, then a dozen. Suddenly, one day the sky is raining albatross. Yowling and mewing and courting. There's so much noise we couldn't hear each other to have this conversation."

Auman meets our flight, a plane full of book-laden high school teachers, a group of professors, mainly biologists, plus a contingent of fishermen and divers. She joins the short bus ride to our barracks—quarters that Midway Phoenix has spent a lot of money providing with some hotel comforts. They've even hired French chef Alain Sacasas and built an elegant restaurant where he cooks breakfasts and dinners. Everyone on the island eats lunch at the former Navy mess hall.

Except for a bus and a few other utility vehicles, Midway is mostly unafflicted by the internal combustion engine; locomotion is on foot, bike or quiet, rentable electric golf cart. Because of the wildlife, no cats or dogs are allowed on Midway. There are no rats, either; they were exterminated by the departing Navy. Along the way, up streets with names such as Radford and Halsey, arriving visitors see neat white "Navy" buildings, a theater, a mall, tall shade trees, flowering plants and married officers' houses now used for staff.

KEVIN SCHAFER

It is slow going to Charlie barracks—which once served as bachelor officers' quarters (BOQ). Our bus has to zig and zag to avoid what look like a million albatross chicks wandering around the lawns and streets. I have always entertained a vague notion of the albatross as lord of the air, able to glide for days on superlong, motionless wings, gracefully sweeping to the far ends of the earth. It's a jolt to see these gawky creatures, not inclined to get out of the way, which is part of the reason why they've earned their goofy nickname. They simply carry on as if impediments such as buses, bikes, golf carts, aircraft and even human beings don't exist. At the command "Get ready to move birds," two husky "bird movers" leap down and gently begin lifting fledglings off the road.

Only one island event is required of all visitors: a formal FWS briefing about ground rules in what once was the base theater. Officially, Midway is a refuge, not a resort, and the jargon in the lecture mainly concerns "compatible wildlife-dependent recreation." This is a challenge to all hands because it involves a more or less cheek by jowl mix of wild creatures and curious human beings. Midway's sacred cow is the Hawaiian monk seal. This animal once numbered in the tens of thousands, but the population dropped precipitously as humans hunted it relentlessly for meat and pelts. Despite present international protection, the monk seal has dwindled to only about 1,400 individuals worldwide.

Monk seals are so fearful and reclusive that the sight of a human being on a beach could stop a female from coming ashore to bear her pup. Should you see one on a beach, the FWS lecturer says, "stay at least a hundred feet away. Even if they're covered with flies and look dead." The only hope for the species lies here on Midway and on a string of small refuge islands that dot the Pacific between here and Honolulu. The U.S. Fish & Wildlife Service is very proud of the 14 pups born on the atoll last year and the 11 more this year.

Because of the monk seals and nesting birds, the whole of Eastern Island is off-limits to people, except for a once-a-week "walk and talk" visit in a landing craft with a drop-down bow like the ones familiar in World War II. Eastern is a desolate place. The revetments and pillboxes have been abandoned to nature. The battle memorial is maintained, however, and the weeds pushing up through the jigsaw cracks in the tarmac are cleaned up once a year. In the noon heat the air boils with the cries of thousands of swirling terns. But anyone who wants to summon Midway's wartime past, or try to imagine how exposed the island's defenders must have felt 59 years ago, should probably start here. In June 1942, Eastern, not Sand, served as Midway's airstrip.

On an Eastern Island beach, National Wildlife Refuge manager Ron Anglin shows visitors bits of plastic. When mistaken for food by adult albatross and passed on to chicks, the plastic flotsam clogs the fledglings' intestines, eventually killing them.

W. PERRY CONWAY

On this day I am with the biology professors, and toward the end of the ruined runway, we come abreast of a huge, treelike clump of beach heliotrope, its gnarled branches covered with squawking, squabbling birds. This has nothing to do with birds of a feather flocking together; it is like an avian Christmas tree hung with different species, most notably a few male great frigate birds, identifiable by the red-balloon sacs at their necks, which they inflate to attract females. Birds are not only on the bush but deep inside. It gives off a drowsy hum of bird noises, almost loud

Above: A white tern chick. Above right: An endangered green sea turtle. Below: Once a week, visitors to Midway clamber aboard an ex-naval landing craft for the 15-minute ride from Sand Island to uninhabited Eastern Island. Here visitors can see many birds that nest only on Eastern, including great frigate birds, several species of boobies, sooty terns and Christmas shearwaters.

enough to drown out the click of cameras and whir of videotape as the professors collect exotic images to stir the interest of their science students back home.

My ear is tuned to the memory of aircraft launching from my carrier off Okinawa at the end of World War II, and the howling thunder of radial engines and prop-driven planes revved up for release to the sky. On June 3, 1942, there were a few B-17 bombers on Midway. They were sent off in the predawn, so as not to be destroyed on the ground like the B-17s under Gen. Douglas MacArthur's command the previous December in the Philippines. Later that day nine bombers flew an attack mission. Their target: a huge Japanese invasion fleet several hundred miles offshore, no one knew exactly where. Some found elements of the Japanese Navy, dropped bombs from on high but scored no hits. Midway-based Marine dive-bombers tried, too, but with little success.

Midway had 28 outdated fighter planes, which did not fly cover for the dive-bombers. They were kept on the atoll to fend off more than 90 carrier-based enemy bombers that attacked the next day with plenty of agile Zeros to protect them. When the Japanese raid ended, a hundred-bed hospital, plainly marked with a red cross, was demolished. Also, the chapel, the powerhouse, several radar installations, the hangars, barracks and row on row of tents were lost in smoke and ruin. More than half of the American fighter planes were shot down.

Despite much bravery displayed, Midway Island's contribution to the battle that bears its name may seem marginal. In a battle, though, nothing stays simple except who won. Some small ironies of war apply here. Except in numbers of planes, the three American carriers and their escorting cruisers and destroyers patrolling northeast of Midway were overwhelmingly outnumbered by the Japanese fleet to the northwest. In fact, the attempt to keep Japan from taking Midway and making the Pacific a Japanese lake was desperate; the U.S. carriers were able to try it only because America had broken a Japanese code and knew what the Japanese fleet intended—but not precisely where it could be found.

It was a crucial radio message from one of Midway's patrolling PBYs, which glimpsed enemy ships around 6 A.M. on the 4th, that gave the searching carriers the initial range and bearing that they needed. Moreover, the island's effort at defense had been fierce enough that the Japanese decided to make another strike before the inva-

SUSAN H. RICKARDS; KEVIN SCHAFER; W. PERRY CONWAY

sion. As a result, when the American dive-bombers and torpedo bombers struck, the Japanese carriers had planes on deck and below being loaded with bombs and gasoline. When they were hit, the explosive damage was tremendous. In a few minutes, while Japanese defenses relentlessly shot down the U.S. torpedo bombers, the unnoticed dive-bombers plummeted to sink three Japanese aircraft carriers. A fourth was sunk later. Thus Midway was saved from the Japanese, and the balance of power in the Pacific changed forever.

American involvement with Midway Atoll goes back well before those dramatic moments during World War II. It began July 5, 1859, when the uninhabited "guano" island, laden with bird droppings used for fertilizer back on the mainland, was claimed by one Captain Middlebrooks for the United States.

In 1903, the year Teddy Roosevelt created the first wildlife refuge—three-acre Pelican Island on the east coast of Florida—he sent 21 Marines to Midway, largely to protect the albatross from marauding Japanese. That same year the first round-the-world cable and wireless company put a station on Midway and erected five handsome houses, eventually importing 9,000 tons of topsoil full of alien seeds, and planting nonnative trees and flowers.

When the cable company came, only a few thousand albatross pairs lived on Midway, but the population did recover. They stayed there with the U.S. Navy through the 1930s, when it created a forward-area base on the atoll. And thousands of them watched as the big flying boats, the Pan Am Clippers, landed in Midway's lagoon during the late 1930s, carrying rich and sometimes famous passengers on their way to Asia. The gooneys managed to survive not only the Japanese attack in 1942 but the Navy's attempt to keep runways clear from the 1940s to the 1970s. During this period, the Navy killed more than 50,000 birds with bulldozers and flamethrowers to keep them from flying into their early, underpowered jet aircraft and causing crashes.

The number of albatross held more or less steady until the population began climbing in the mid-1960s and through the 1970s. But modern times brought new kinds of problems. When feeding on the surface of the ocean, they collectively gulp down—and later throw up if they aren't killed by them—thousands of plastic cigarette lighters mistaken for squid. Behind the Oceanic Society's research office on Sand, seven large cartons overflow with stuff from gooney bird stomachs. Not

Above left: A spinner dolphin frolics. Above: A Hawaiian monk seal slumbers on a Midway beach. Below: Two trained volunteers band an albatross, a tradition that began in the 1940s. By tracking individual birds, ornithologists learned that an albatross can live more than 50 years. This newly banded fledgling will take to the air shortly and not return to Midway for a couple of years.

FLIP NICKLIN/MINDEN PICTURES; KEVIN SCHAFER (2)

The Midway National Wildlife Refuge is managed cooperatively by the United States Fish & Wildlife Service and the Midway Phoenix Corporation, which recently built the Clipper House (above), a restaurant boasting a French chef and fine views of the lagoon.

only are there lighters, but plastic pencils, spools, toy tops, hairpins, combs, tiny lightbulbs, even a small radio tube from the days before transistors.

On Midway, late June or early July is shocking for any visitor who harbors any lingering romantic notions about the albatross. It's been seven months of hard work, and most albatross parents are returning to the nest just once every two to three days. They are waiting for that moment when the chick is gone—out on its own. For the thousands of gooney bird fledglings, each day more assailed by heat, thirst and hunger, the time has come to fly or die. Or at any rate get the squid that provide them with life-giving food and drink. Fortunately, more than 90 percent will make it.

At this stage they are at their gooneyest, with their comical, intense, nearly cross-eyed look, enormous triangular feet, huge wings and long bills. In the process of shedding the thick gray down from their heads and necks, they acquire ridiculous hairdos. Initially, this can put you in mind of bewigged English magistrates or Cyril Ritchard playing Captain Hook. Later, if their from-the-top-down shedding is balanced left and right, they wear sideburns.

You start out by simply wanting to cheer them on their way, especially when they flail at the air with outsized wings. Standard flight exhortations run to "Go! Go! Go!" or "Get with it, buddy!" One gray dawn, while watching some young birds perched on a seawall flapping but not flying, a teacher from Hawaii, who has raised four sons, bursts out, "There's breakfast out there! Don't you want your breakfast?"

As the days grow hotter, with no breeze or rain, the birds are even less mobile. We want to help them. If they move at all in the heat now, it is mostly to shuffle into a nearby patch of shade. Outside my window in Charlie barracks, a row of ten have edged into the slender shadow of a single telephone pole. But most birds just sit there waiting as the sun burns down upon them.

Why don't they move at least a bit farther in search of shade? I wonder. Unhappily, their biological makeup prevents them from straying too far away from the spot where they were born, the location to which their parents have brought them food for months on end. Each afternoon when the sun is at its hottest, a curious and unsettling spectacle presents itself on the island's largest expanse of grassy field. The space, lined on its eastern side with tall ironwood trees, is vastly larger than Yankee Stadium. Evenly spaced at about five-foot intervals, legions of fledgling albatross are stationed there, motionless. Many hundreds of them face away from the sun in concert, like a field of the faithful praying toward Mecca. The tips of their huge feet are protected from the sun's heat by their bodies and raised off the ground for better circulation. Birds fairly close to the trees have gravitated into broad strips of shade. There is plenty of room for more, but the multitudes do not stir.

Nothing can be done, of course. There are too many. Up to a thousand a day are dying and are picked up in the wee hours and hauled to the incinerator. "This is not Disneyland," Heidi Auman has said. "Mother Nature takes its course here, and it's survival of the fittest. It has to be that way." Still, like many other softhearted visitors, and many island dwellers with lawns, I de-

JIM LEACHMAN (2)

cide to use a hose, in this case the one attached outside Charlie barracks for rinsing sandy feet, to give a quick sprinkle to the dehydrated fledglings nearby.

Fledglings that fly this spring, if they live, will spend two to seven years at sea before returning to Midway to find a mate. Whereas the great frigate bird and sooty tern stay aloft the whole time because their feathers are not weatherproof, the albatross spends as much as half of its time floating on the surface of the ocean, preening, resting and feeding. Albatross don't breed until they are 8 or 9 years old, the average life expectancy of most songbirds. Why albatross and all other seabirds exhibit what ornithologists call "deferred breeding" remains one of the biggest mysteries in the biology of these animals.

When the albatross return home from their extensive wanderings, they look for a mate and practice an elaborate head-bobbing courtship dance. While the dance looks absurd and quite gooney, it provides a critical function: each bird is making sure that it is in sync with its potential mate. Albatross and other seabirds share an unusual trait—males and females split the duties involved in incubating the egg. Over a period of a month or two, the albatross pair must

After spending as many as seven years at sea, juvenile albatross, like the pair below, will return to Midway to begin an elaborate courtship process, which involves dancing, head-bobbing, bill clacking and whining vocalizations.

coordinate their comings and goings so the egg is protected from the hot sun. Should one parent stay away too long or both become hungry at the same time, the egg could be in jeopardy. Individual variations exist among birds, just as they do with humans, and if the parents are not on the same schedule, then problems will occur. "The level of communication that goes on between the couple," says Smithsonian research associate Elizabeth Schreiber, "is truly remarkable. Somehow they can discover their compatibility quite accurately during a series of courtship dances. Once they've selected a mate that works, the two will remain together for life, which can span more than 50 years."

After the egg hatches, around mid-January, the parents make many trips to sea to feed the chick. Recently, a small telemetric device fastened to a foraging Laysan parent from an island near Midway revealed that it had flown nonstop for 4,000 miles in search of food for its chick. Research using telemetry reveals that albatross don't wander aimlessly, but instead are careful students of the wind and currents and where the fish are. The albatross digestive system includes a device like those that dairymen use to separate cream from milk. It takes fresh squid and processes it into two separate compartments, one for nourishing oil and the other for everything else. The energy-rich oil is stored to be fed to chicks back at the nest, while the rest is digested by the adult. The returning father or mother regurgitates breakfast in the form of a ghastly gray gruel. Spring isn't spring here, it's fledging time.

Today, Midway's 400,000 nesting pairs represent 70 percent of the world's Laysan population; they are by far the most numerous albatross species. Many of the 20 other species are not thriving. One reason is relentless and general—decrease in habitat. Read increase in people. Another is cruel and specific: longline fishing. Black-footed albatross particularly strike too often at baited hooks and drown.

Like the globe itself, the ancient atoll and its gooney birds are a marvel of design. They are also an evolutionary treasure, paradoxically preserved of late by war and military occupation. Heidi Auman puts it well: "Here the life force is right in your face. Albatross are the island's soul."

Former SMITHSONIAN *editor Timothy Foote has written about many of his journeys, a few of which are Hadrian's Wall (April 1985), the Island of Sark (May 1986) and Gibraltar (September 1997).*

ELIZABETH WOLF

THE JOURNEY BEGINS

Have you got the notion to go to where the gooneys go?

ON MIDWAY, everything is for the birds. Even airplanes fly on gooney time; Aloha Airlines makes sure its two-hour flights from Honolulu (about $600 round-trip) arrive on Sand Island after dark so as not to collide with any flying albatross. Although the emphasis at the Midway Atoll National Wildlife Refuge (midway.fws.gov) has changed recently "from bullets to birds," the place, reports Timothy Foote, has more than enough World War II relics—gun emplacements, an ammo shelter, huts, and seaplane ramps—to satisfy any of those whose ears might be tuned to the roar of the prop-driven planes that once flew from here. Walking tours will reveal the story of the battle that made this tiny group of volcanic islets so famous. Be sure to check out the 1940s-era Midway House, the Senior Officers' Quarters and the mall and theater complex, all of which were planned by Henry Ford's factory designer, architect Albert Kahn. If you'd like to volunteer (you'll pay for the privilege) in the conservation research efforts going on at Midway, the Oceanic Society (800-326-7491) will train you to collect data on the ecology of either seabirds or spinner dolphins. Or if your pleasure is fishing, snorkeling or just relaxing, reservations for rooms (from $125 to $300 per person, per night) in the BOQ-turned-hotel can be made with Midway Phoenix (888-643-9291).

FOR MORE ON MIDWAY, we've packed our Web site, **smithsonianmag.com/journeys,** with travel tips, essays from experts, and video clips of gooneys and spinners.

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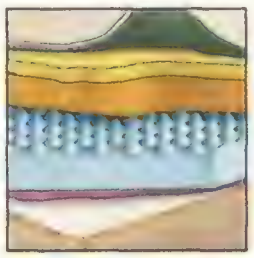

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Don Foster Has a

Way With Words

A LITERARY FORENSICS EXPERT WHO TEACHES ENGLISH AT VASSAR HAS UNCOVERED A SHAKESPEARE ELEGY, CONFIRMED TED KACZYNSKI WROTE THE UNABOMB MANIFESTO AND, WITH THE FBI, IDENTIFIED ERIC RUDOLPH AS A SUSPECT IN THE 1996 ATLANTA OLYMPICS BOMBING ◆ BY DAVID ROBERTS

CLOSING HIS EVENING BROADCAST ON FEBRUARY 15, 1996, poker-faced as ever, CBS anchor Dan Rather intoned, "The same scholar who recently used his computer to identify what he says is an undiscovered poem by Shakespeare and got some high-profile attention for himself has now unleashed his machine on author Anonymous."

Squirming in front of the TV set, Don Foster wondered whether his proverbial 15 minutes of fame might turn into the low point of his career. He had just identified journalist Joe Klein as Anonymous. A mild-mannered professor of literature at Vassar College, in Poughkeepsie, New York, Foster caused a minor academic fuss by arguing that a neglected (and mediocre) 1612 funeral elegy by one "W. S." had actually been written by William Shakespeare. Foster's technique depended less on external evidence of authorship than on an acute analysis of style: word choice, punctuation, spelling, habitual phrasing, poetic devices and the like.

As Rather broadcast that evening more than five years ago, the country was abuzz with gossip about the best-selling roman à clef *Primary Colors*, based on Clinton's 1992 Presidential campaign. The identity of its author, called simply "Anonymous" on the title page, had been kept a well-guarded secret. Everyone in the capital had a guess who the wasp-tongued insider must be; the *Washington Post* published a list of 35 suspects. Approached by *New York* magazine, whose editors had read an article about his Shakespeare attribution, Foster was talked into trying his hand at the puzzle; he had just gone public with his own hypothesis.

Presently, the object of Foster's suspicions, *Newsweek* columnist Joe Klein, appeared on TV smirking. "Now I know what it's like to be the flavor of the week. It's not me. I didn't do it. This is silly." Foster's humiliation seemed complete. It

Foster created a word usage system he called "badges" and "flukes," to prove Shakespeare wrote the 1612 elegy (above) honoring William Peter, a 30-year-old Oxford student.

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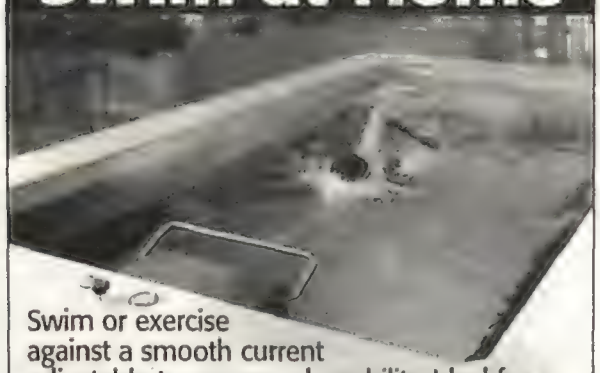

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"dorky," "slouchy," "cottony"
— Primary Colors *by Anonymous (Joe Klein)*

would take another five months before Klein, under mounting pressure, confessed to the deed. Nearly everyone in Washington had been wrong. Professor Foster had been dead right.

Thanks in no small part to that coup, Don Foster has become a celebrity. Just last winter he made *People* magazine and newspapers across the country by proving that the beloved American poem, "The Night Before Christmas," had been written not by the straitlaced Bible teacher to whom it had always been attributed, Clement Clarke Moore, but rather by a bon vivant named Henry Livingston.

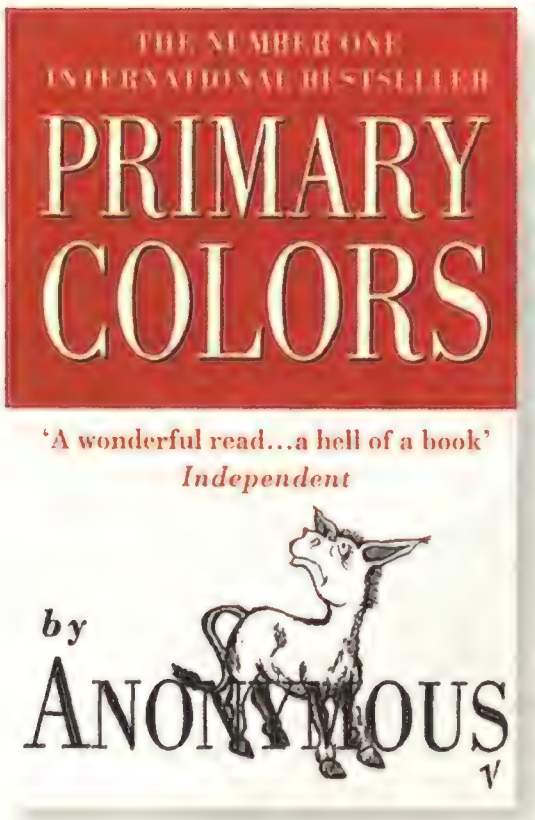
As the successful results of Foster's technique, which he calls literary forensics, have multiplied, his services have been sought by a whole new set of clients: prosecutors, detectives, public defenders, even the FBI. Four years ago, Foster applied his pyrotechnics to Ted Kaczynski's Unabomb Manifesto. Though he is not at liberty to talk about the case, he was recruited for the JonBenét Ramsey murder investigation in hopes that his analysis of the famous ransom note may yield the identity of the 6-year-old beauty queen's killer. And Foster recently turned to the unsolved Centennial Park bombing at the Atlanta Olympics in 1996 and, with the FBI, helped deduce its likely perpetrator by linking the man to a series of other Atlanta bombings.

Last December, at age 50, Foster published a memoir of his adventures in literary detection, called *Author Unknown: On the Trail of Anonymous*. It's a lively, personal narrative of what Foster's career in literary forensics has entailed. The book reveals Foster's wry wit, which he turns both on himself, in whimsically self-deprecating passages, and on his opponents. In the mid-1980s, trying to get his dissertation on the Shakespeare elegy published, Foster suffered a series of setbacks at the hands of experts who were asked to peer-review the manuscript. Miffed at their scornful anonymous reports to the publisher, Foster turned his bag of tricks loose on those very documents, successfully deciphering who their authors were, then writing them letters. He was vindicated when those scholars responded, expressing surprise that the publisher had blown the reviewers' cover (a breach of academic ethics), and he chortled his triumph in notes to those scholars explaining how he had figured out their identities.

The chapter of his book dealing with the authorship of *Primary Colors* lucidly explains Foster's technique. Having agreed to tackle the puzzle, the professor asked *New York* magazine to supply him with computer discs containing large samples of the known writings of all 35 suspects fingered by the *Washington Post*. (The suspects ranged from Henry Kissinger to *Doonesbury* cartoonist Garry Trudeau.)

Using his computer to scan the samples for habitual phrasings and word choices, Foster quickly narrowed the list. Both *New Yorker* writer Michael Kelly and Anonymous used such unusual words as "reedy," "rabbity" and "machine-gun nests." Only novelist Lisa Grunwald and Anonymous used "cracker," "firefly," "misty," "reflexively" and "underpants." Along with his computer-aided text scans, Foster applied a kind of old-fashioned sensitivity to tone and outlook. Thus Foster observed, "The two kinds of females in *Primary Colors* are bitches and bimbos," and "Though Henry [the narrator] and

P. 100 RICHARD SCHULTZ; P. 101 CHRISTOPHER CORMACK



his creator, Anonymous, both love to use the F-word whenever possible, they have trouble imagining anyone actually performing it."

Despite such promising leads as Kelly and Grunwald, none of the suspects showed enough similarities with Anonymous to clinch the case. Foster almost gave up. Then he studied the works of Joe Klein. "Bingo!" he writes. "Anonymous's vocabulary was all over Joe Klein's journalism, and vice versa." The dovetailing was not the sort of thing that a casual reader might have noticed. A list of 16 adverbs both writers were fond of included such common words as "precisely" and "vaguely." It was the statistical unlikelihood that two different writers would show a partiality for all 16 that gave a strong clue.

Foster pounced on other predilections. Both Anonymous and Joe Klein liked to use adjectives created by adding a *y* suffix to nouns: "dorky," "slouchy," "cottony." There was even a slyly planted clue in the novel's opening line: "I am small and not so dark." *Klein* is German for small. Fired with his discovery, Foster called up his editor at *New York*. "I think I've got him," he said.

Hoping to observe Don Foster in his milieu, I traveled to Poughkeepsie last January. He greeted me in his office. Slight, fit-looking, clean-shaven and balding, Foster is a sharp-featured

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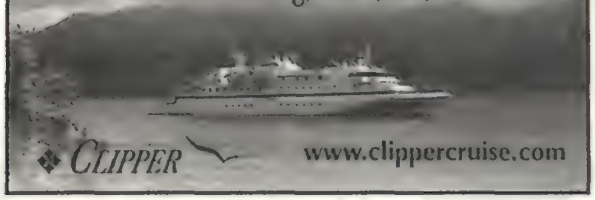
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"You can't eat your cake and have it too."
— *Unabomber Ted Kaczynski*

man whose eyes, peering through wire-rimmed glasses, display an alertness verging on the manic. He was dressed in the predictable flannel shirt, blue jeans and hiking boots. The cluttered shelves of his bookcases bore such tomes as the *First-Line Index of Manuscript Poetry in the Bodleian Library*.

I realized at once that I was in the presence of a world-class workaholic. One of the first things Foster said to me with a groan, as he waved his hand at the computer screen above his desk, was: "I've got more than 2,000 unread e-mails on that thing." When the phone rang, he jumped like a jittery private in a foxhole. When he popped out to photocopy a paper for me, he practically jogged to the copy machine. Whether deliberately or not, Foster does a good imitation of the absent-minded professor.

"My students tell me I talk too fast. Nobody used to say that about me," he explains. Yet no matter how distracting the demands on his time—and they seemed constant: the ringing phone, student meetings, flights to Canada to consult on a criminal case the day before and the day after my visit—Foster turned the full focus of his attention on me while I interviewed him.

The truth is, Don Foster is a modest man, and celebrity has not come easily to him. He has tried hard to keep his public persona separate from his Vassar life. As I sat in on his Shakespeare class, one of his students, Caroline Kinsolving, told me that in a weary moment, a week or two after his book had been published, the professor had said, "I wish this was all over and I could go back to being a quaint old English professor."

As he is the first to tell you, Don Foster did not invent literary forensics. For at least two centuries, scholars have been arguing authorship on the basis of style. It is safe to say, however, that before Foster no one had attacked the question with such elegant rigor. Though he is equipped with sharp intuition and an exquisite feel for style, Foster relies less on those skills than on analytical reason.

From researching the Shakespeare poem—perusing microfilms of moldy Renaissance books and manuscripts—Foster became convinced that any writer's style was so full of quirks and idiosyncrasies that it could render identity as accurately as DNA or fingerprints.

In Poughkeepsie, I browsed through Foster's first book, *Elegy by W. S.* The text bristles with charts and lists and diagrams, and yet the argument is as lucid as a pane of glass. One table, for instance, catalogs the occurrences of certain words in the funeral elegy compared with the frequency of the same words in the works of Shakespeare and nine of his most prominent contemporaries. "W. S.," for instance, uses the verb "to addict" three times in the elegy. The same verb occurs four times in the Shakespeare sample, but not once in Spenser, Marlowe, Ben Jonson, Sidney or the other five contemporaries.

Like a mad scientist of words, Foster invents such terms as "badges" and "flukes." A badge is a word that occurs with unusual frequency in both W. S. and Shakespeare; a fluke is one that appears in the elegy but not in Shakespeare. Whither such taxonomy? To make the point, via yet more charts and tables, that the badges so outnumber the flukes (by a ratio of nine to one) as to make W. S. look awfully like the author of *King*

Lear. Foster turned his hypervigilant attention to Shakespeare's unusual use of such words as "most" and "more," coming up with oddities such as "more bigger-look't" and "most most loving."

Foster is very cautious in his claim. He will not say that he has proved authorship; only that the evidence strongly favors it. I emerged from my browsing utterly convinced. So, by now, are most Shakespeare scholars. Says Prof. Richard Abrams of the University of Southern Maine, currently at work on a book about the elegy that was initially inspired by Foster's discovery, "The attribution is utterly sound. I've come up with a great deal of new evidence, among which there's no candidate that casts doubt on Shakespeare's authorship."

The statistical apparatus that forms the backbone of Foster's analysis has led to a widespread misconception, the very one that Dan Rather mongered in his 1996 broadcast. Critics and journalists alike have pictured Foster simply plugging an anonymous text into some computer that then spits out the name of the author. Foster indeed uses a computer in his work, mainly to search vast databases. But the brunt of the work is, in Foster's epithet, "infinitely tedious."

In his office, Foster showed me how he uses the computer. When he analyzed the writings of the Una-

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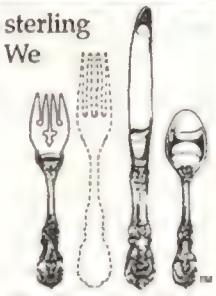
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"This is a scrap of a souvenir I took from your house on December 18, along with your wife's life."

— Letter attributed to an accused murderer in Missouri

bomber, Ted Kaczynski, he noticed a number of stylistic quirks. (It was not Foster, of course, who fingered Kaczynski after the *New York Times* and the *Washington Post* had published his rambling manifesto, but Kaczynski's brother's wife, who, thinking the writing sounded a lot like the screeds of her eccentric Montana-hermit brother-in-law, showed the manifesto to her husband, who went to the FBI. What Foster performed was a retrospective analysis of the document that yielded abundant clues the FBI had missed, down to the obscure authors who had influenced Kaczynski's radical thinking.) Kaczynski repeatedly wrote, "You can't eat your cake and have it too," a reversal of the normal phrasing of the old proverb. The question was, how unusual was that reversal and which authors tended to make it?

Foster called up a database that catalogs 290,000 works of English literature. Quickly he typed in the instruction, "cake near.5 eat." This command told the computer to search for all instances of the word "cake" appearing within five words of the word "eat." Within seconds, a list of more than 200 answers popped up. Scanning through the entries, Foster focused on the instances of the proverb-reversing phrase. Strikingly, all were from British rather than American works. This fit together with Foster's independent discovery of Kaczynski's preference for certain British spellings such as "skilful" and "licence." The Unabomber had read a lot of books written in British English.

Now Foster refined his command, typing in a new instruction. Turning to me before the answers came up, he said, "No single detail is telling. It's a holistic thing." Or, as he writes in *Author Unknown*, "Not even a clever fellow like Ted Kaczynski can escape the cabin of his mind's linguistic system. Give anonymous offenders enough verbal rope and column inches, and they will hang themselves for you, every time."

Many of the databases Foster uses he compiles himself. Stalled for years is a half-finished project he calls Shaxicon, a compilation of the least-common words in all of Shakespeare's works. No computer can churn out the answers here: Foster must tediously reread all 37 plays, 154 sonnets, and the other poems, counting word recurrences as he goes.

Yet as he described his unfinished Shaxicon, Foster sighed. "I've put in thousands of hours. I'm not sure what the electronic equivalent of 'gathering dust' is, but. . . "

In 1980 Foster was accepted by the English department of the University of California, Santa Barbara. It took him five years to earn his PhD. A seminar in literary style turned Foster's interest toward the methodology of ascertaining authorship. With his discovery, on microfilm, of the W. S. funeral elegy, Foster found a perfect dissertation subject. Says one of his former professors, Richard Helgerson, "Without much guidance from us, Don developed some extraordinarily sophisticated techniques to prove authorship. And he found the funeral elegy on his own."

In 1986 Foster snagged a job at Vas-

sar, and today he is a tenured full professor, occupying the Jean Webster Chair of Dramatic Literature.

Foster is married to Gwen, whom he has known since high school. They married in 1974. They have two sons, Blake and Eric, now 17 and 15, respectively. A moving passage at the end of *Author Unknown* narrates Foster's 50th birthday party last year, when Gwen and the boys try to tempt him away from his publisher's deadline with presents and a cake decorated as a book. "They have accomplished part of their mission," Foster writes: "I feel terrible about continuing to work." Naturally, neither of his sons has made his way through Dad's book. Blake is interested in digital art, Eric in computers, and both aspire to be rock musicians. Foster finds the time to stay in good shape by running four miles every other day, and by roller-blading, water-skiing and snow-skiing as often as he can with his sons.

After studying the Unabomber papers and getting involved in criminal cases, Foster became concerned about his family's safety. He has ordered his sons never to open a package mailed to the Foster home by an unknown correspondent. "You have to remember," Blake says blandly, "a lot of people Dad deals with are in jail now."

Following the *Primary Colors* brouhaha and his work on the Kaczynski case, Foster was not surprised to be approached by criminal investigators. A flood of interest on the part of business lawyers, however, came as an unexpected demand. It turns out that the business world is rife with libelous and threatening anonymous communiqués, as well as with the unsigned protests of whistleblowers who fear the loss of their jobs if they reveal their identities.

"I could quit my job at Vassar and make really good money just handling these business cases," said Foster. Then he continued, "But my heart wouldn't be in it. I'm first and fore-

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— "Army of God," Eric Robert Rudolph

most a teacher of English literature."

That ranking of priorities, as well as an old-fashioned liberal sympathy with the oppressed, has led Foster to take on most of his criminal cases pro bono. But the moment I confirmed that fact, Foster demurred. "I don't want to come across as a saint."

During my visit to Vassar, Foster explained to me the details of two ongoing criminal investigations. Not long before, he received a phone call from a public defender in Missouri. Her client had been accused of the brutal murder of his wife, but she believed him innocent. The crucial piece of evidence was a typed, anonymous letter to the man in prison, from a writer who claimed responsibility for the murder. The case was a grim one. After being grilled all night by the police, the husband had confessed, but the public defender believed that the confession had been coerced from an exhausted suspect.

In his confession, Tommy (the names have been changed) described a drunken evening spiraling downward, culminating in his rage over the squalor of his house. Tommy stabbed his wife to death as she slept, then left, after midnight, to find his girlfriend, Ramona.

Now Foster showed me the anonymous one-page note, a key piece of evidence. It was one of the most chilling documents I have ever read. "Hello, Tommy," it began. "I thought you might like to have this. But think before you touch! It's Christmas, tis the season—this may be your get out of jail free card if your [sic] lucky. This is a scrap of a souvenir I took from your house on December 18, along with your wife's life."

With the note, the writer had mailed two small pieces of fabric soaked in blood, apparently to invite detectives to compare the DNA with the victim's. (Forensic tests matched the blood with that of Tommy's wife.) The note went on to describe the murder, specifying details that only someone who had been inside the house could know. What galvanized my sense of horror was the cold-blooded relish with which the writer described the act:

"I started stabbing. She started screaming. Tommy! Tommy! Who are you? Why are you doing this? Your girl was loud! I got her good a few times, but she got away from me and ran for the door. I grabbed the neck of her tshirt—gray I think—and shoved her up against the wall in the hall. It left a streak across from the bathroom door. . . . I finished her off, threw the knife in the floor by the stool and left her face down with her head up against the door."

The public defender hoped the note could prove Tommy's innocence, confession or no confession. But the prosecutors suspected at once that the girlfriend, Ramona, had written the note, in hopes of turning police attention away from Tommy and toward some mysterious intruder.

Foster took up the case. The note was not a long one, but he seized upon the quirks of typography and usage

that it displayed. The word "kitchen" was twice misspelled "kithcen." Such a distortion, of course, could be a deliberate red herring. The writer made dashes by typing two hyphens with no spaces on either side. He or she had a penchant for single-digit numerals—"2 bedrooms for kids," "2 dressers and a dark chair"—and for one-word sentences: "None."

Supplied with several samples of Ramona's writing, Foster concluded that the anonymous note was in all likelihood hers. Immersed in the case, he pieced together the details of that terrible night and came up with a scenario even the police had overlooked. Foster hypothesized that Tommy's confession was more or less true, but that sometime between 12:45 and 2:00 A.M., Tommy had taken Ramona to the scene of the crime to witness it in appalling detail, perhaps with a plan already formulated to write a bogus note claiming responsibility for the murder. (In his confession, Tommy had reported the odd fact that Ramona had vomited during the night. Foster thought that detail jibed with a possible visit to the scene of the crime that would have upset her.)

So matters rested at the time of my visit. Foster's analysis could not in itself prove Tommy and Ramona's guilt. As he pointed out to me, "The standards of evidence that have to be met in a criminal case are necessarily

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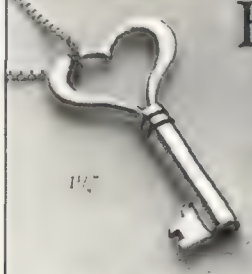

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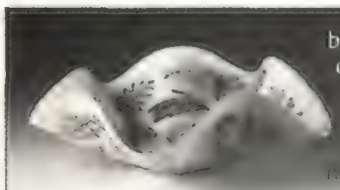

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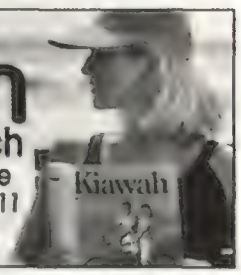

"Give anonymous offenders enough verbal rope and column inches, and they will hang themselves for you, every time."

—*Don Foster*

much higher than in a dispute about literary attribution. People's lives hang in the balance."

Several weeks later, a jury acquitted Tommy. Foster believes that if the prosecutors had taken the bogus letter more seriously, a different verdict might have resulted.

Meanwhile, even the FBI had come to recognize the investigative power of Foster's modus operandi. And he is now involved in a much higher-profile case than the Missouri murder.

In the wake of the 1996 Olympics bombing at Centennial Park in Atlanta, and the government's embarrassing error in arresting the innocent Richard Jewell, there was a string of other bombings—of abortion clinics in Atlanta and Birmingham, and of a lesbian bar near Atlanta. Authorities did not at first link these various crimes. Among the masses of crank letters and misleading tips such prominently publicized events inevitably produce, a series of handwritten diatribes, mailed to such addresses as "N. B. C. News Bureau," began to surface. In them, the writer took responsibility for three bombings, while ranting such slogans as "Death to the New World Order." The letters were invariably signed, "Army of God."

The FBI was convinced that the letters were genuine; their author had too much inside knowledge of the various bombing scenes to be an imposter. The epistles themselves, however, were all written with felt-tip pen in square block letters that defeated handwriting analysis.

The FBI had a long list of suspects. One of them was Eric Robert Rudolph, a white supremacist, debunker of the Holocaust, and survival expert. Rudolph was also a suspect in the abortion clinic bombings. Before the authorities could question him, Rudolph disappeared into the North Carolina backcountry, where he has evaded a two-year manhunt.

During the past year, the FBI has turned to Foster. Ignoring the handwriting, the professor analyzed the letters' verbal tics, comparing them with the texts of letters Rudolph had written in his normal cursive hand. There were fascinating parallels. Both tended to capitalize abbreviations and separate the letters with periods, as if they were acronyms: "E. T. C." for "etc.," for instance. Both wrote "FBI" as "F. B. I.." (adding an extra period at the end of a sentence). There were high-level correlations in spelling, grammar, syntax, even the intellectual source material that lay behind the diatribes. Foster managed also to decode certain numerical games the writer liked to play. Return addresses invariably began with the numerals 1-7, which Foster saw as an allusion to "Army of God," *a* and *g* being the first and seventh letters of the alphabet. The cryptic string "4-1-9-9-3" Foster unraveled as an allusion to the Waco conflagration, which took place in April 1993.

In his recent report to the FBI, Foster concluded that it was indeed Rudolph who had written the letters. This made him the probable perpetrator of the abortion clinic and lesbian bar bombings, though it did not directly link the man to the Centennial Park case. Whether Eric Robert Rudolph is still at large, of course, or whether his body lies decomposing in

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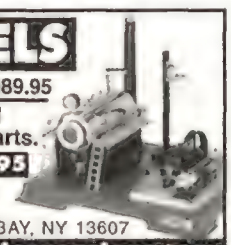

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some Appalachian swamp, is an unsolved mystery.

The Shakespeare class gets under way with the usual palaver about term papers and readings. Foster sits on his desk, feet planted on a chair turned away from him. In this session, we'll be discussing *Richard II*.

The teacher opens a manila envelope and pulls out a doll. "I got this from one of the readers of my book." He waggles the doll like a puppet. "It happens to be Richard the Second."

The air becomes electric, for Professor Foster's secret life has momentarily come out of the closet. "Do you get lots of letters?" a student asks.

Foster nods, and suddenly he puts the doll on the desk, stands up and begins reciting the famous speech from *Richard II*, Act III Scene ii ("For God's sake let us sit upon the ground / And tell sad stories of the death of kings"). Using his hands as props, he paces toward one group of students, retreats, aims himself at another clutch. One moment his voice twists in self-pitying outrage; the next it hardens into brassy contempt for his usurper, Bolingbroke; then it mutates into a whisper of cynical misanthropy. Foster's face changes with his inflections. Without a single hitch, the speech unfolds, all 34 lines of glorious iambic pentameter.

The class is mesmerized. The moment their teacher ceases, the students burst out in gasps and applause. As if abashed by his exhibitionism, Foster lowers his eyes and says, "Sorry, I got carried away by the doll."

Yet the impact of the speech lingers and reverberates. Banished for the moment are the unread e-mails, the outside world's clamoring for his extraordinary skills. Don Foster is blissfully afloat on a sea of language, and if he and Shakespeare can teach these acolytes to swim, well, that's all he can ask of life.

Frequent contributor and former English professor David Roberts says he felt a twinge of regret watching a master teacher at work.

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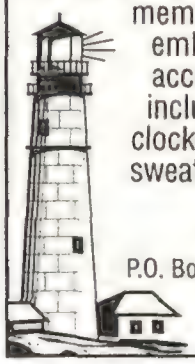
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Hal and Margaret Roth roamed the Mediterranean in the 35-foot sloop Whisper, *hungry for real and mythical history.*

We Followed Odysseus

Hal Roth

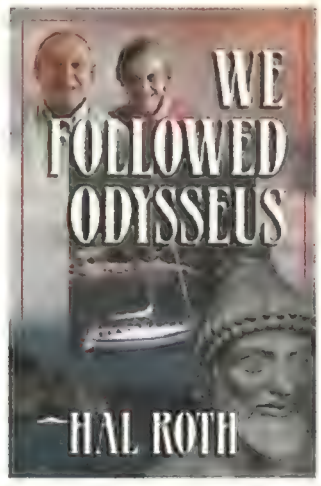
Seaworthy Publications, $27.95

AFTER THE TROJAN WAR, AN ACCIdent-prone Greek named Odysseus sailed home to Ithaca on the western shore of Greece. The distance there from Troy, Hal Roth tells us, is only 565 nautical miles. But due to some celebrated doings (and undoings), Odysseus wound up logging several thousand sea miles along the way. He got home, to be sure, but the journey took ten years.

Hal and Margaret Roth made the same trip in two, with time out to winter in Malta. They roamed the eastern Mediterranean in the 35-foot sloop *Whisper*, hungry for real and mythical history. Armed with half a lifetime's sailing experience, equipped with the latest navigation gear, up to their necks in charts, treatises and translations of the *Odyssey* (they favor the latest, by Robert Fagles), they followed his presumed route, rowing ashore for fun, fresh water and local research wherever he was supposed to have landed.

Setting out from Troy in Turkey, at the mouth of the Dardanelles, the Roths land, at last, in Ithaca, where Odysseus, after a good meal and a warm bloodbath (briskly administered to Penelope's suitors), at last gets to bed with his ultra-patient wife.

Happily for readers, along the watery way Roth not only synthesizes the salty lore of famous scholars and seamen, like Lionel Casson and Ernle Bradford, but retells much of the *Odyssey* in brisk and knowing prose.



This is important. The narrative is chronologically intricate. Its best parts are not about sailing, or our hero's grim and goofy goings-on with man-eating monsters and sirens, but involve prewar politics in Ithaca, and Odysseus' tricky homecoming.

Like the *Iliad*, the *Odyssey* may have been written by Homer, who may or may not have been blind, or by a committee of poets. Whoever put it together did so more than 400 years after the siege of Troy, which probably happened about 1200 B.C. Despite that gap, the story often describes Odysseus' landfalls so precisely that oceans of scholarly ink have been expended, and thousands of nautical miles sailed, by passionate folk like the Roths trying to pinpoint his progress around the Mediterranean world.

Odysseus seems to have set out with more than 600 men in 12 "black" ships. All 12 eventually were wrecked. Except for our hero, all the men were smashed up, drowned or eaten alive. Of course, the sea god Poseidon had it in for Odysseus. Roth makes clear, however, that even without being turned into swine, spending seven years with the wrong woman (see Calypso) and the sea god's baleful attentions, the Greek way home might have proved to be one long nautical nightmare.

Those dramatically "black" ships were black because they had to be treated with pitch almost daily to keep them more or less waterproof. Little more than fragile 55-foot war canoes, they were light enough to be handily hauled out on any beach. They swamped easily in heavy seas and carried a scrap of square-rigged sail, good only to run before the wind; going to windward at all required 20 oarsmen. This pretty much entailed coastwise sailing or island-hopping, near enough to land to run up on a beach in storm weather, to spend the night, or even go ashore for lunch.

Today some of Odysseus' presumed landfalls are full of tourists, lavish hotels and tiers of new villas. Some are backwaters with no electricity or potable water. The Mediterranean is always beautiful, however, and many coasts the Roths sailed were lonely and lovely. For this reader at least, one particular stop, the little port of Bonifacio on the south coast of Corsica, was a wonderful surprise, as well as a convincing proof of how literally Homer's text can sometimes be relied upon. This is where surly Laestrygonians, hurling boulders down from towering cliffs, sank 11 of the Greek ships. Bonifacio's harbor, Roth writes, "is one of the few places in the Mediterranean with complete shelter behind high cliffs; the anchorage mirrors Homer's description: 'A harbor ringed on all sides by precipitous cliffs, with a narrow entrance channel between two bold headlands.'" Charts and photographs make clear how easily you could simply drop great rocks on vessels moored below.

We Followed Odysseus is a fine book for sailors and armchair travelers alike. You can't open it without the urge to read (or reread) the *Odyssey*. Cruising sailors could do worse than begin dreaming of a future trip with Roth aboard for sailing instructions, an estimable companion until landfall is reached at clear-watered Ithaca.

Reviewer Timothy Foote is a former Board Editor at SMITHSONIAN.

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The Battle of Midway by Robert Hough, Macmillan, 1970

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THE LAST PAGE

Hell on Wheels

BY LARRY WALLBERG

TODAY'S AUTOMOBILE commercials show men and women joyfully hitting the open road, driving just for driving's sake. But I've long since had enough aimless motoring. When my family hit the open road, the open road hit back.

Dad had a unique sense of direction. He could get lost sliding from one side of the couch to the other. The only way he was able to read a map was to sit at the kitchen table and maneuver a penny. Slowly, speaking aloud the exit numbers, he'd move the coin along the route. Every time he had to make a turn, he'd rotate the map and say, "Let's see. North is . . . ?"

Once we were actually in the car, he'd shake his head in disbelief at every junction and say, "I could have sworn this was gonna be 41. Where'd 67 come from all of sudden?" Meanwhile, Mom would be holding the map. Except that she'd be more interested in finding out how to refold it than in looking at it. She couldn't be bothered with Dad's precious numerals; she thought in terms of landmarks. Mom had a great memory for any building or billboard to which she could attach a personal story. But if somebody tore down the cafeteria where I once threw up, or papered over the billboard picture of the woman who looked like our next-door neighbor only without a mustache, she would be hopelessly disoriented.

I was terrified of never being able to find our way home again. "Where are we?" I'd ask. "We're lost, right?"

"Remember the shoe store where you tripped over the laces?" Mom would respond. "I think we are coming to it."

My sister Risa was afraid of motorcycle noises. Every few minutes, she'd ask the same question. "You don't see any motorcycles, do you?"

"Of course not," Mom would say, as if the possibility were unthinkable.

"Isn't that one?" I'd screech, gleefully pointing out the window at nothing in particular.

Mom, who always sat in the back, as a living barrier between us, would say to Risa, "He's making it up. Don't worry." Then she'd whisper, loud enough for me to hear, "Just don't tell him we're lost, OK?"

Nanny sat next to Dad up front. "How can you call me a backseat driver?" she'd ask. "Look where I am." Her main job was to remind Dad that he was going too fast if the car was actually moving.

It was also her function to complain about her girdle. "Uy," she'd announce to the windshield. "My two-way stretch is killing me." I never could figure out what part of her needed to be pulled in more than one direction. "What is that thing stretching?" I'd ask. "Never mind," she'd answer. "Pay attention to your own underwear."

Mom was oblivious to all the negative energy. "Who wants ice cream?" she'd ask, with a cheeriness that turned everyone's stomach. "We're almost at Howard Johnson's."

"I don't know about that, honey. Maybe they renumbered the signs, 'cause I don't remember any 103."

"Keep straight. I'll tell you how to turn when we get to the movie theater where we saw *Around the World in Eighty Days*."

"Are we lost?"

"We still have 79 days to go. Ask me then."

"Hey, that's very funny, Mom. No kidding, does anything look familiar?"

"Is that a motorcycle?"

"What is this, a race? I thought you said 'a nice drive.' Listen, it wouldn't kill me to use a ladies' room."

"It is. It's a motorcycle!"

"Seriously, does anybody have a clue where we are?"

"Uy. If I don't get to a toilet soon, I'll bust."

"Since when do exit numbers have fractions?"

"Mmmmmm! Can't you almost taste that butter pecan!"

And that's about the time we'd run out of gas.

MATT WUERKER

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